

FIG. 1A

FIG. 1B

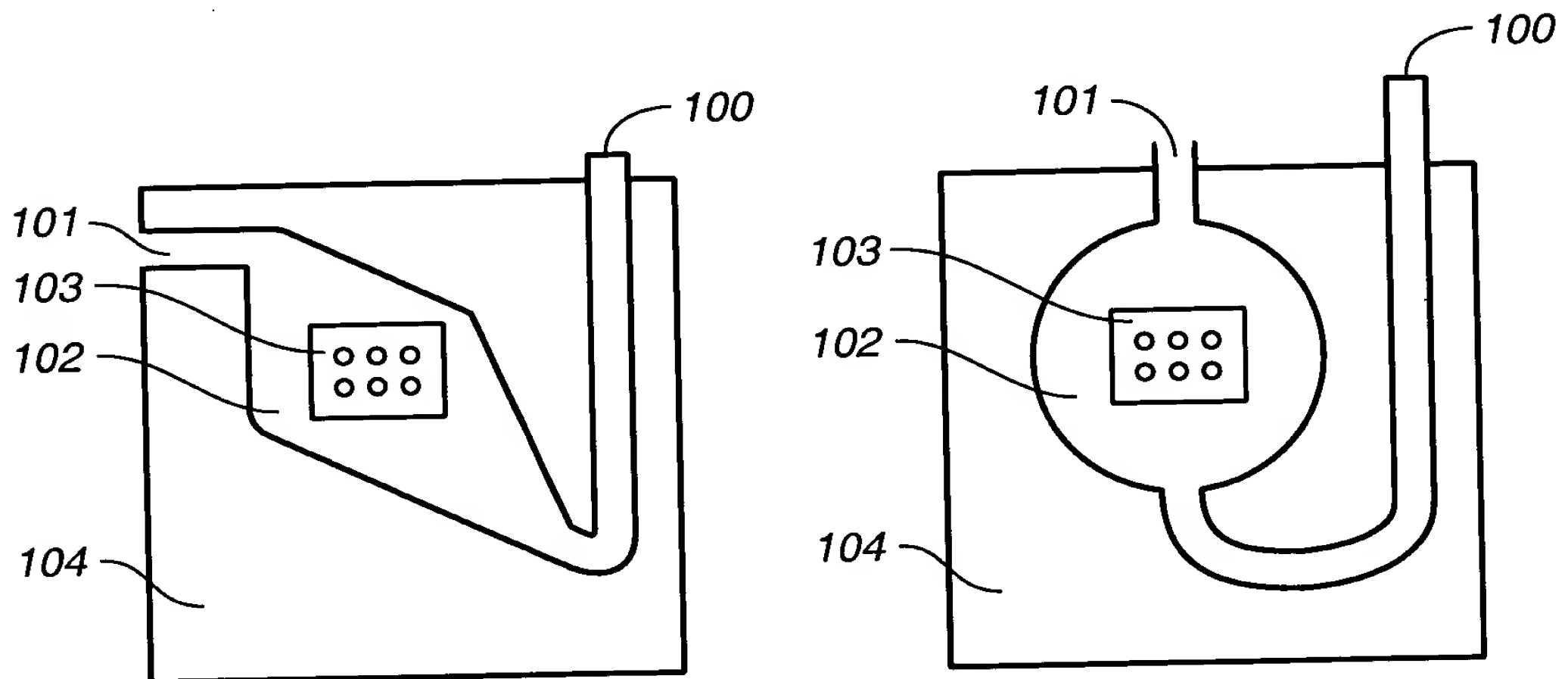


FIG. 1C

FIG. 1D

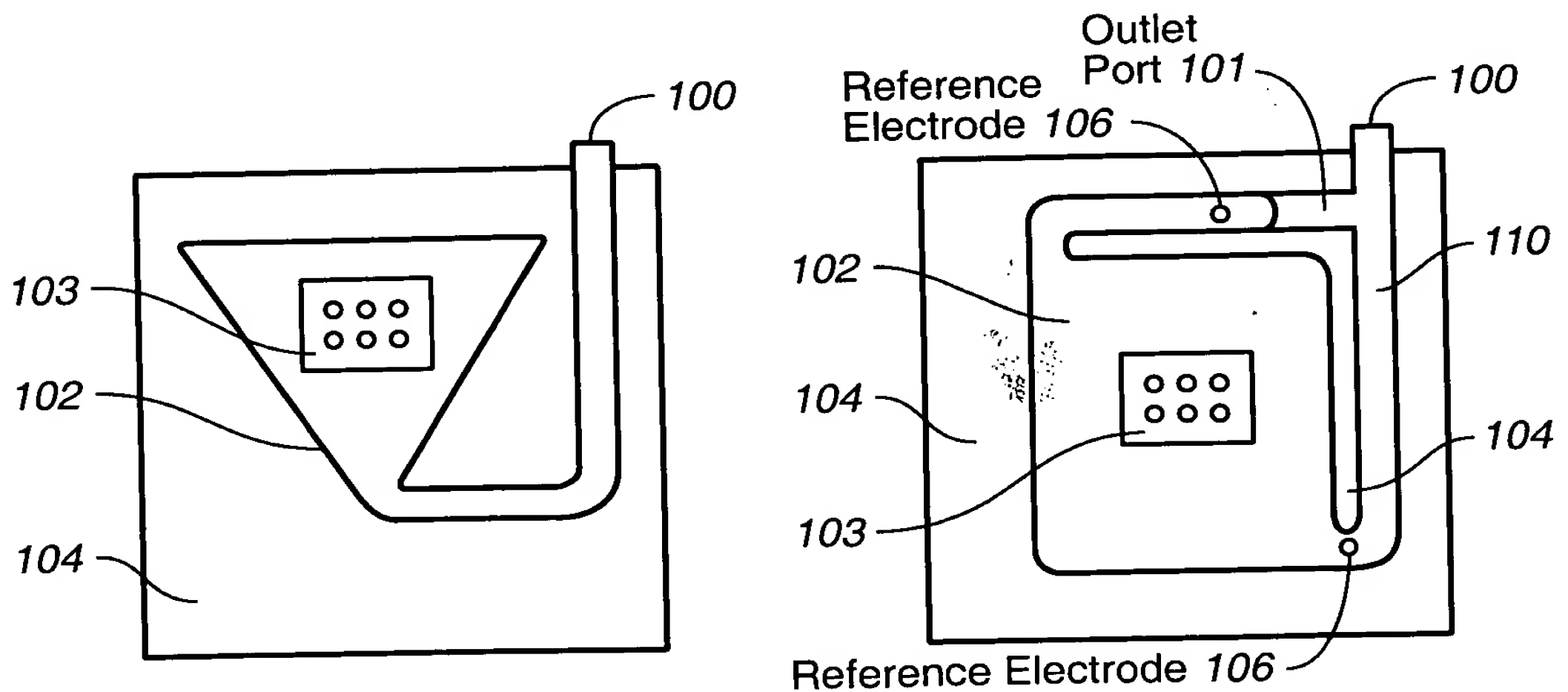


FIG. 1E

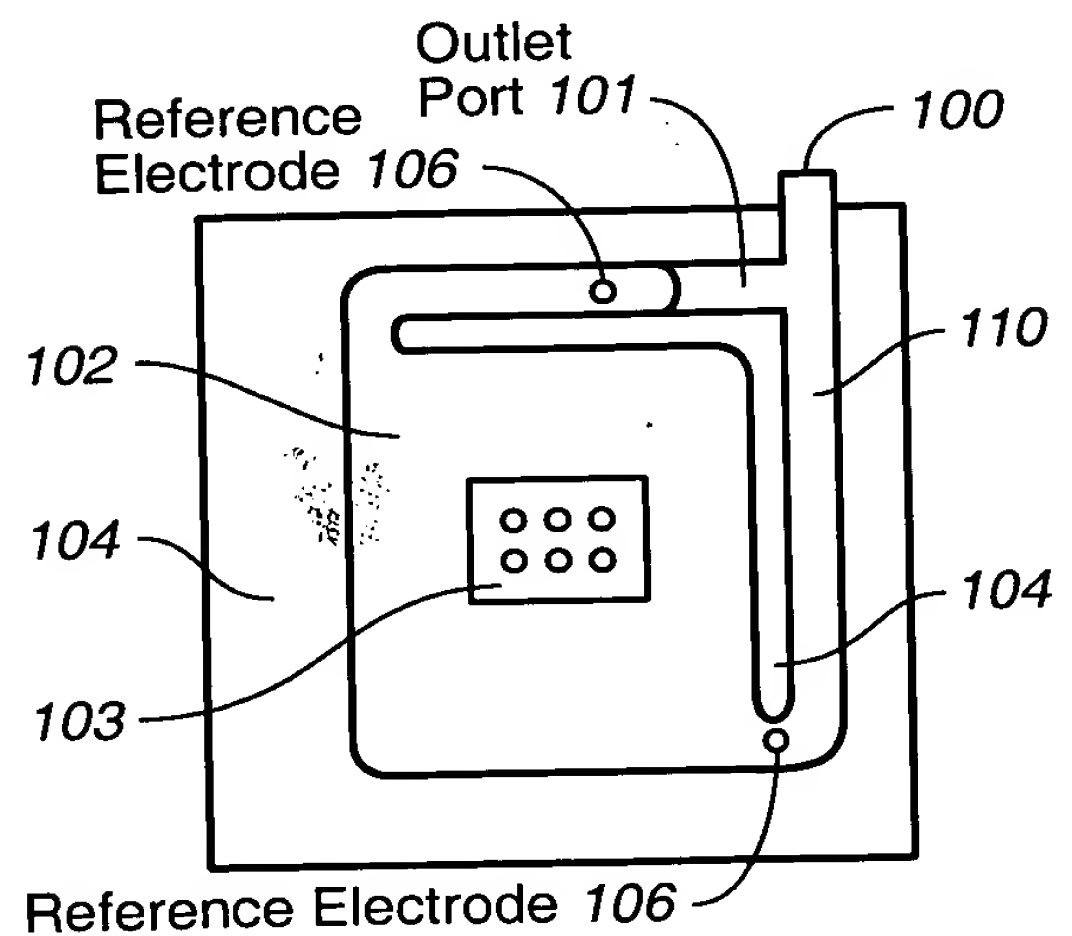
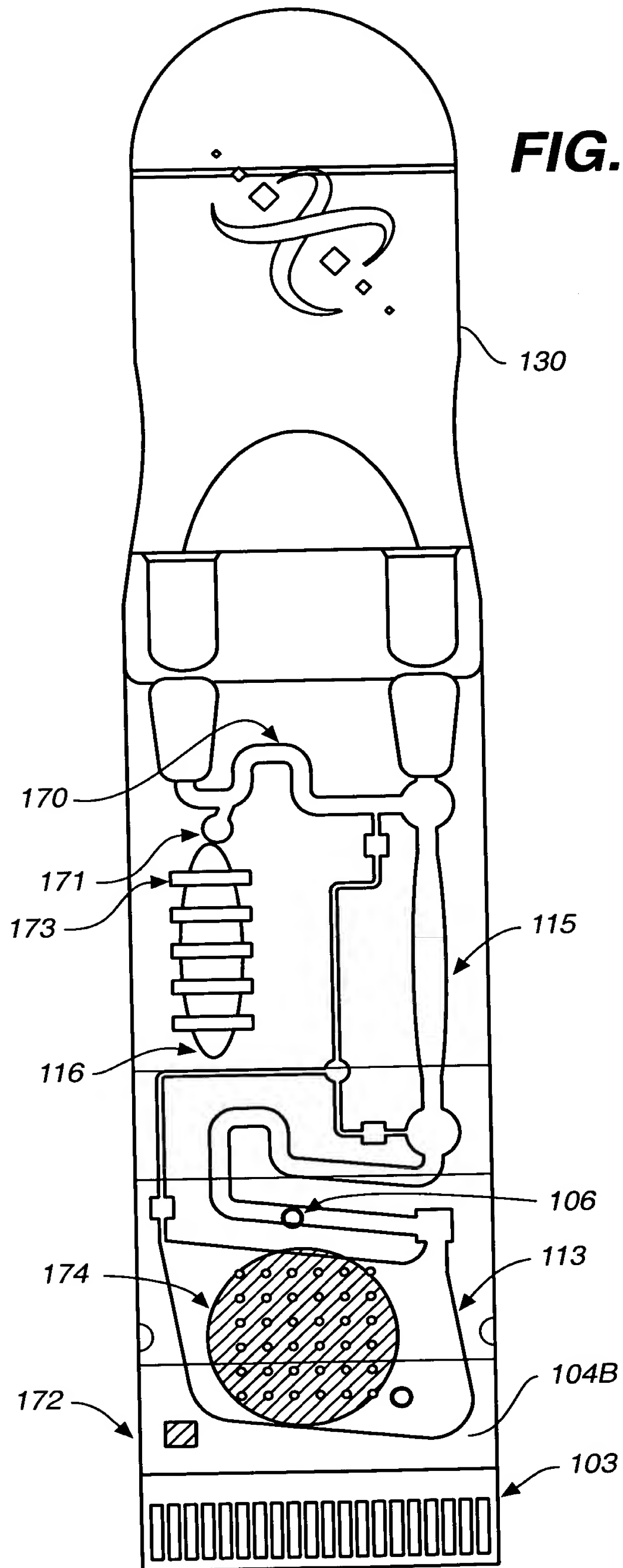


FIG. 1F

FIG. 1G

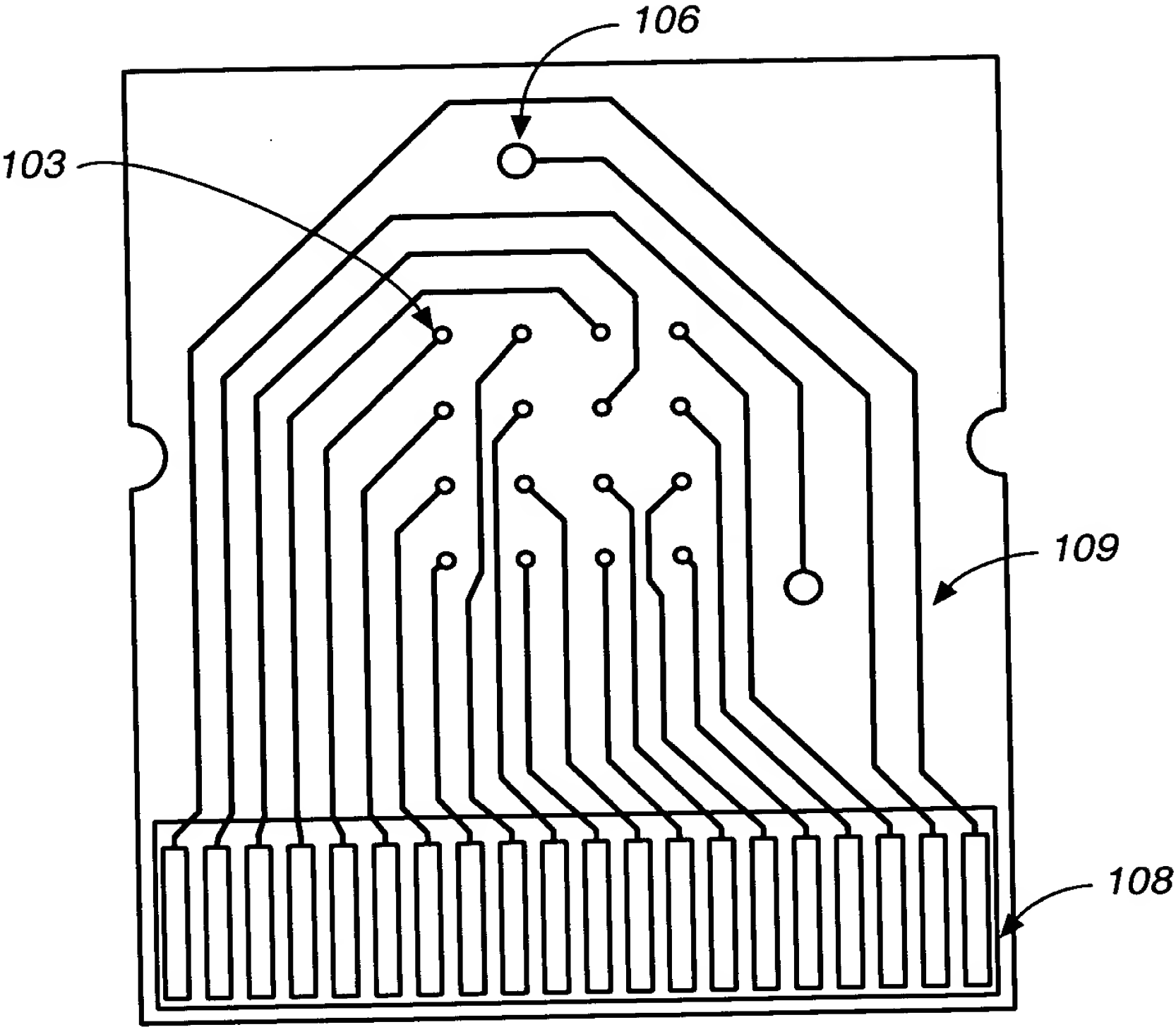


FIG._1H

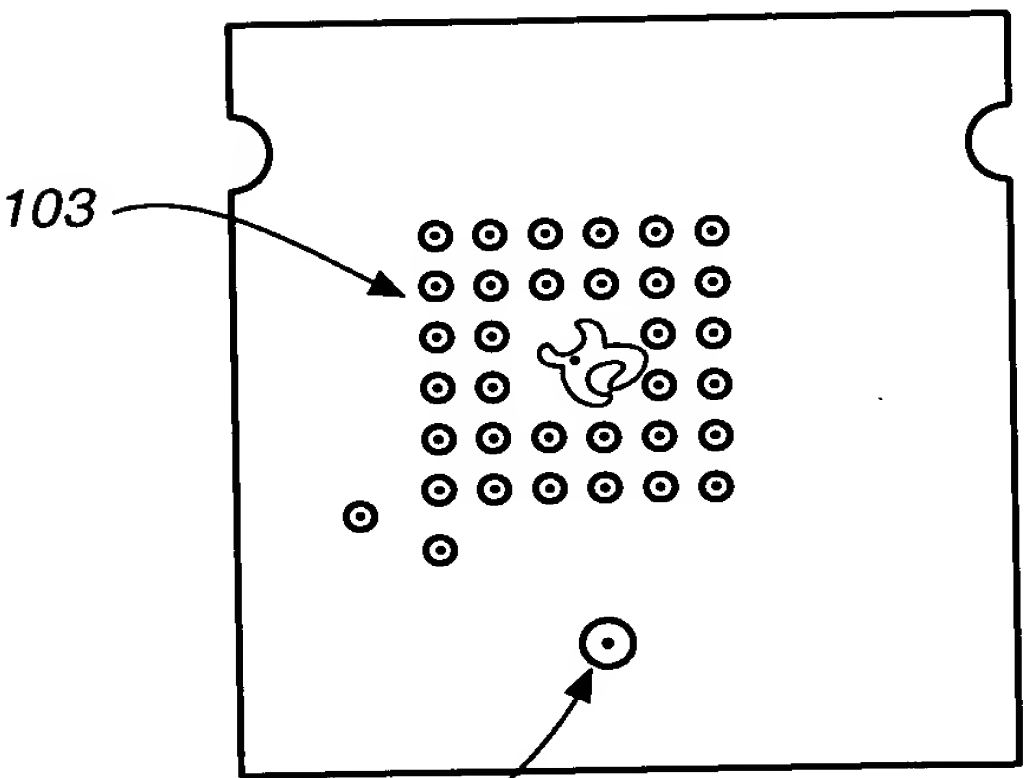


FIG._1I

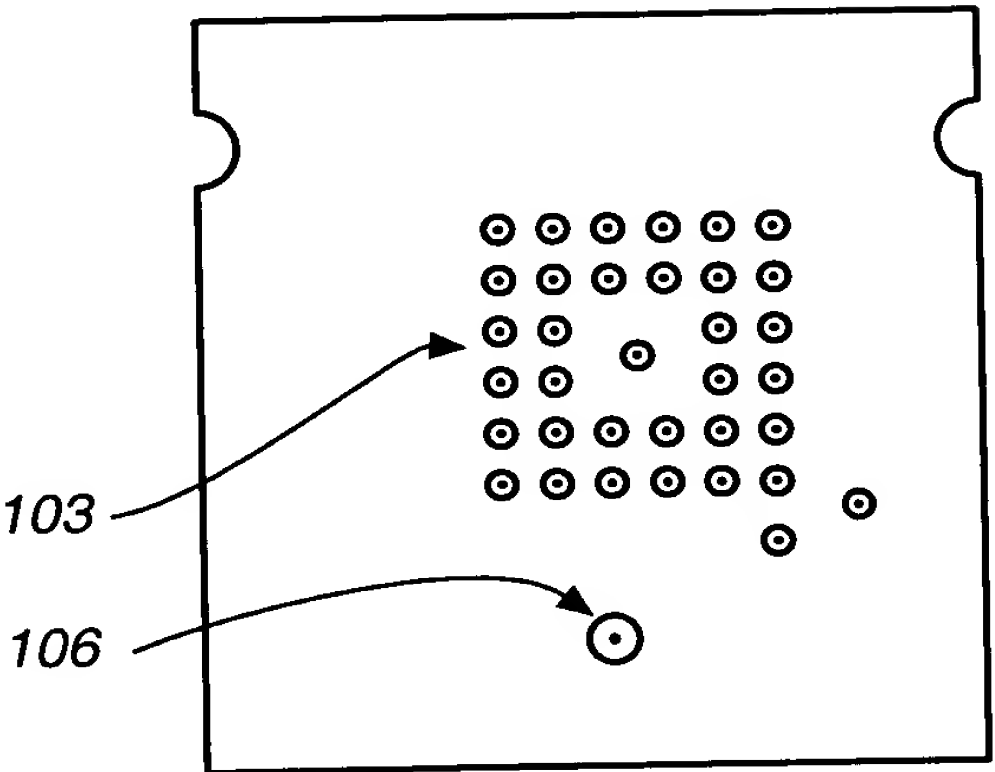


FIG._1J

A-68718-4

4 / 49

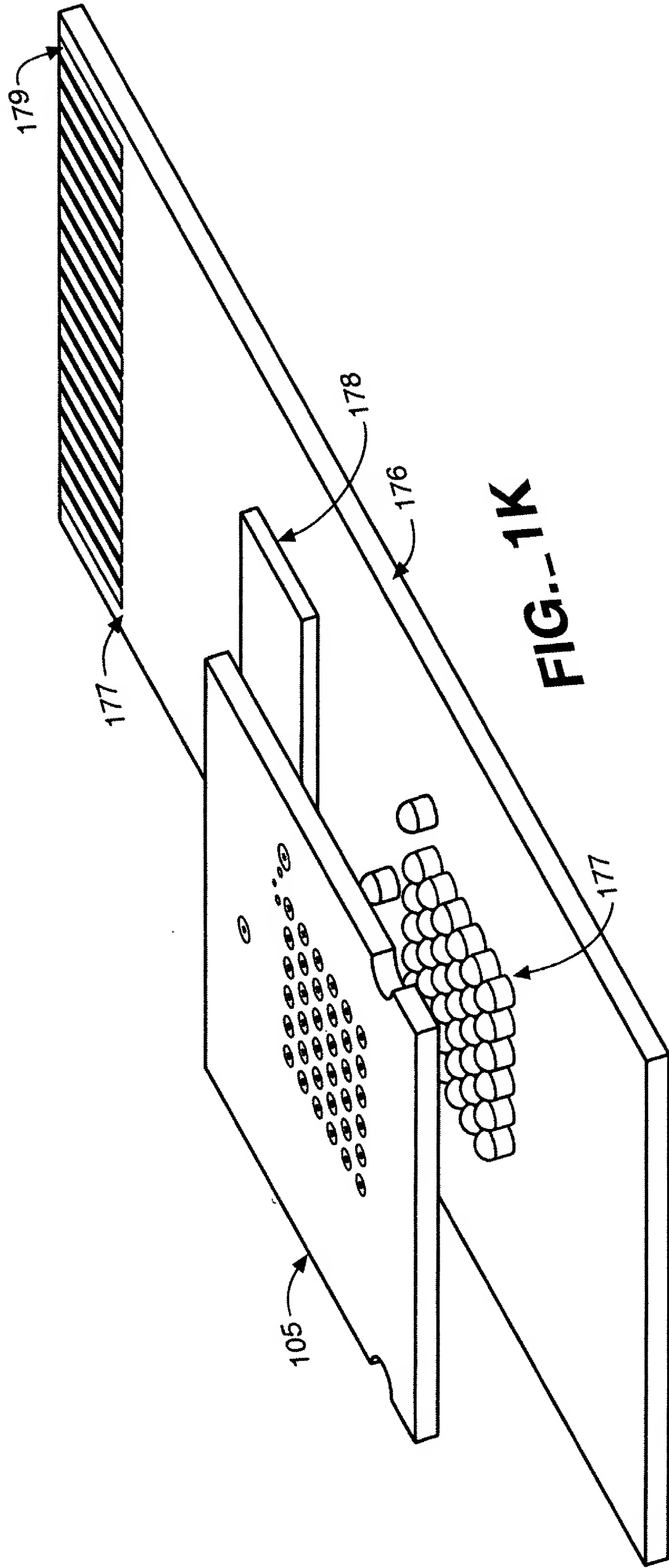
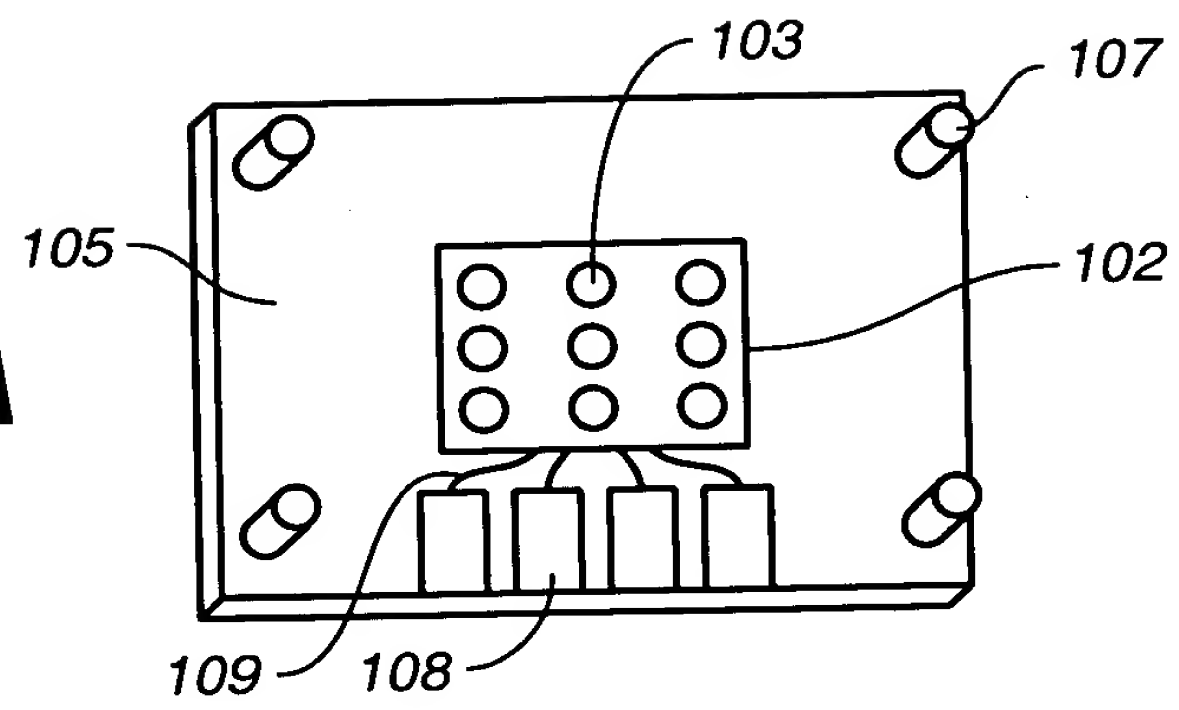
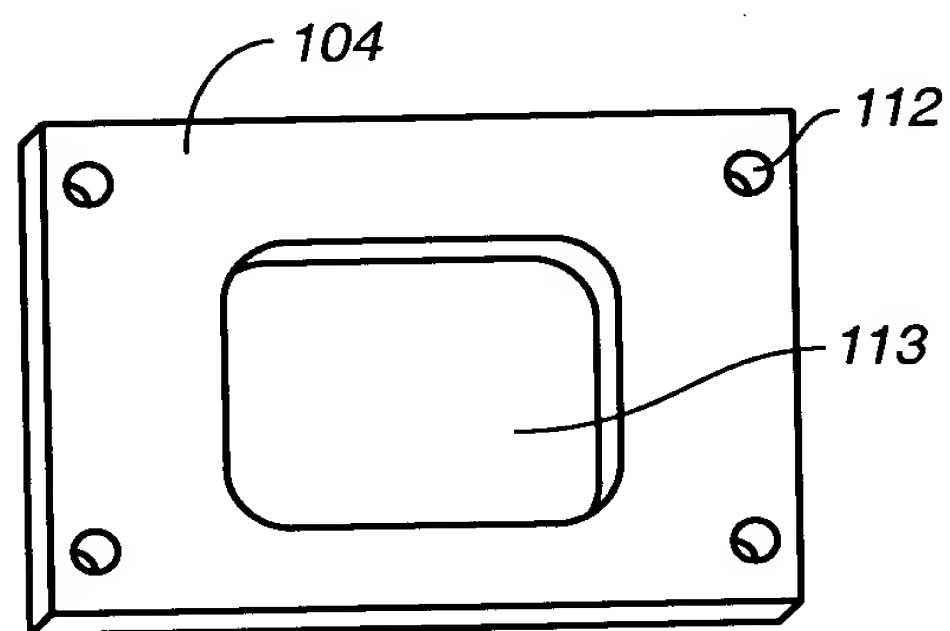
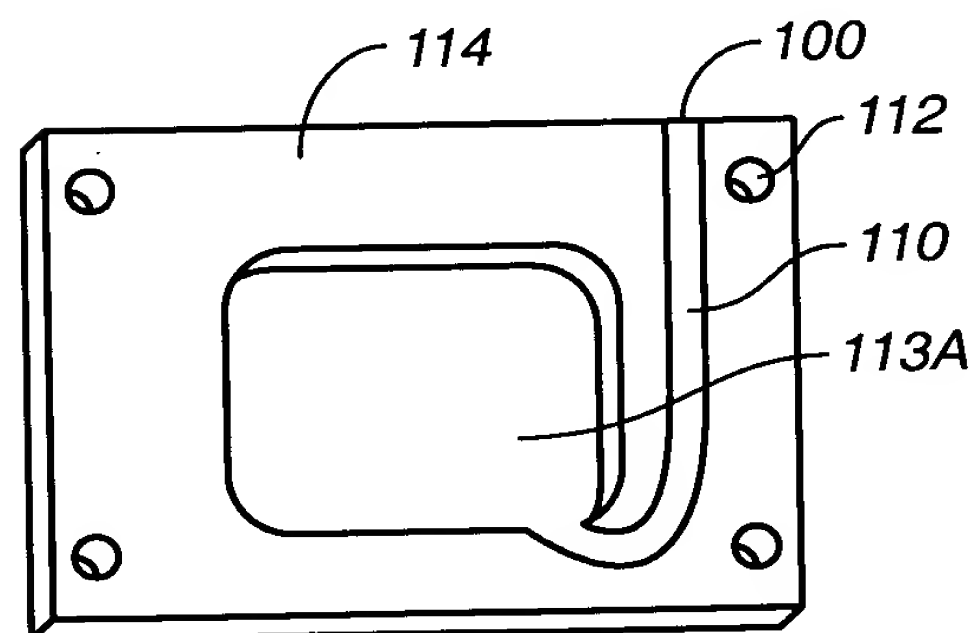
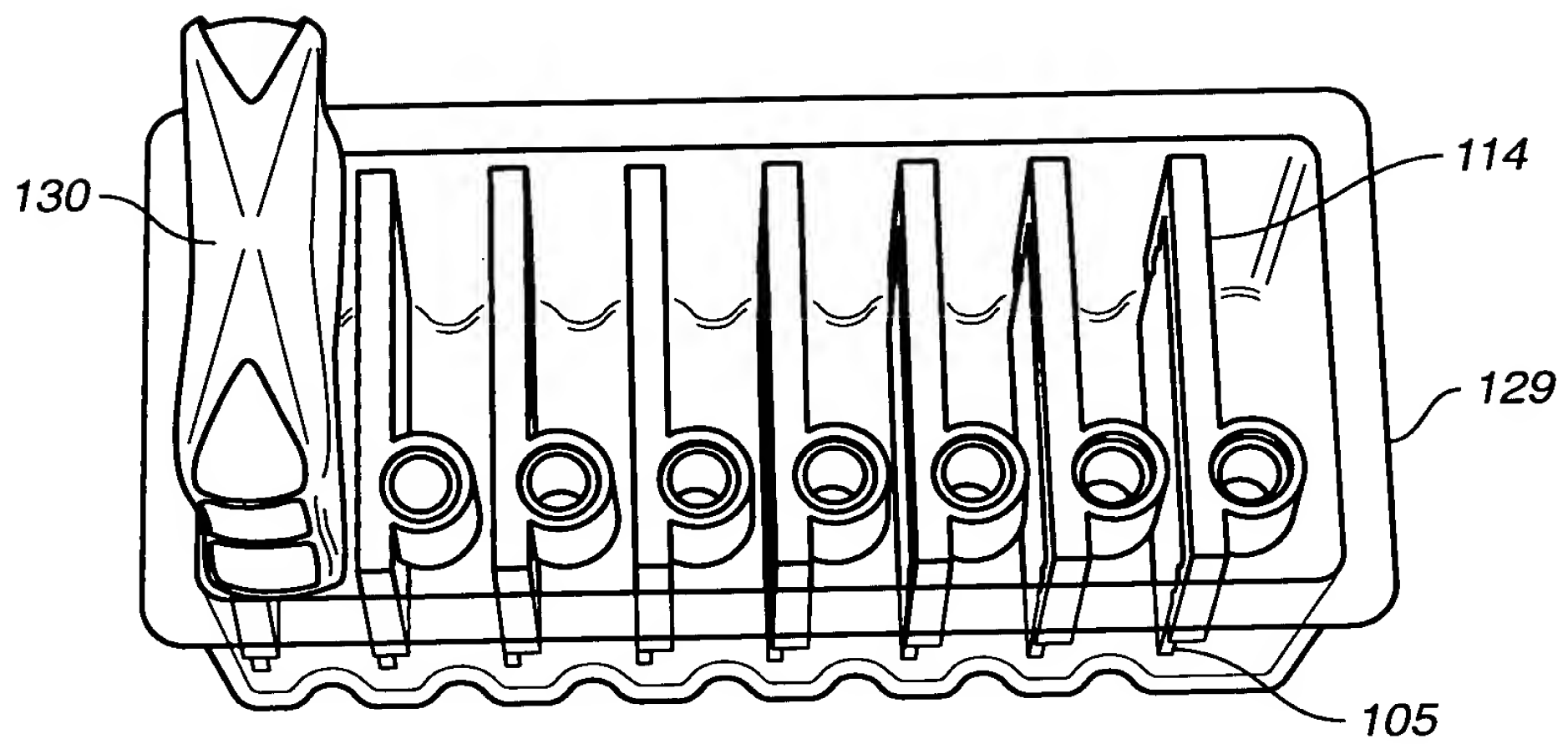
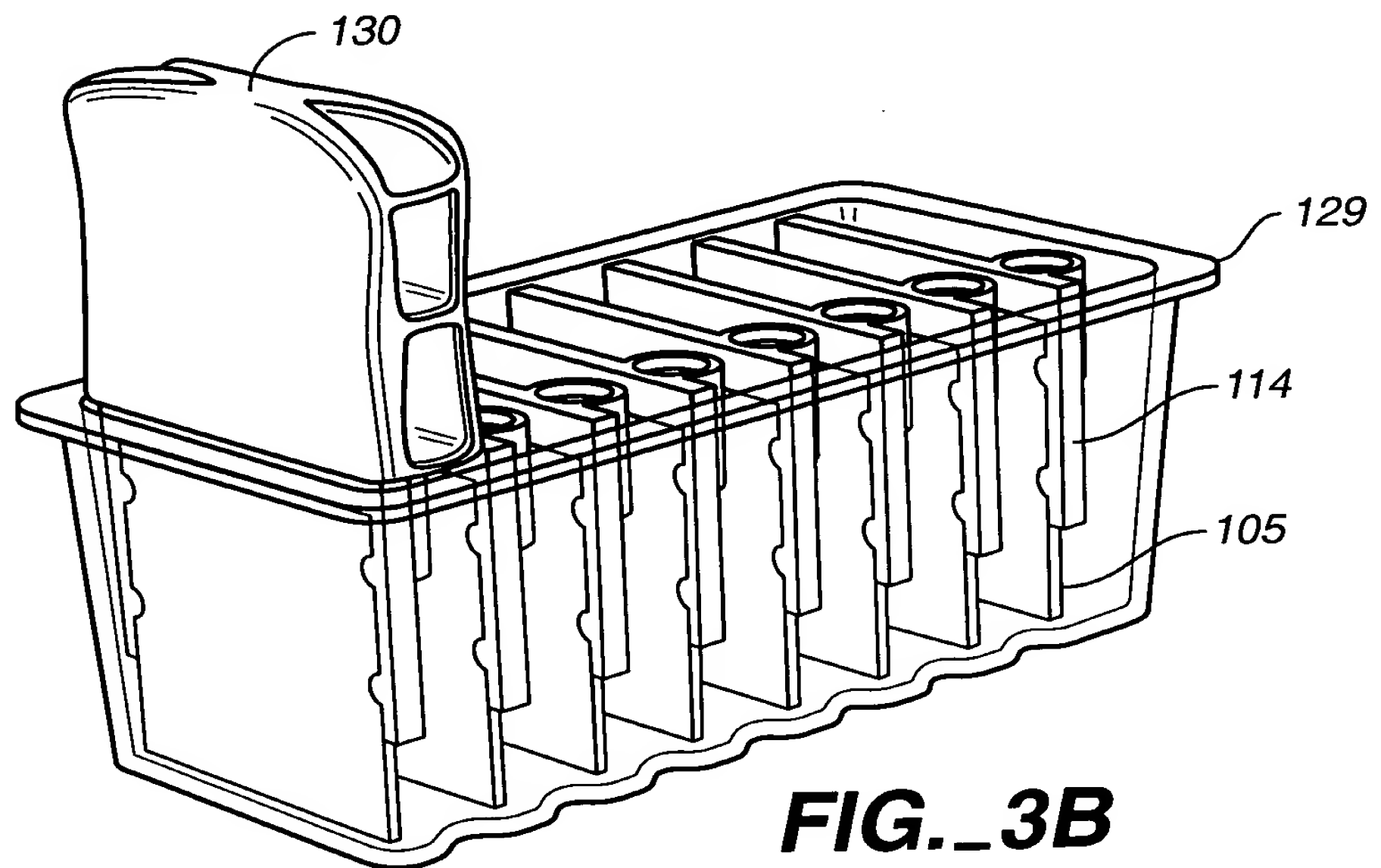
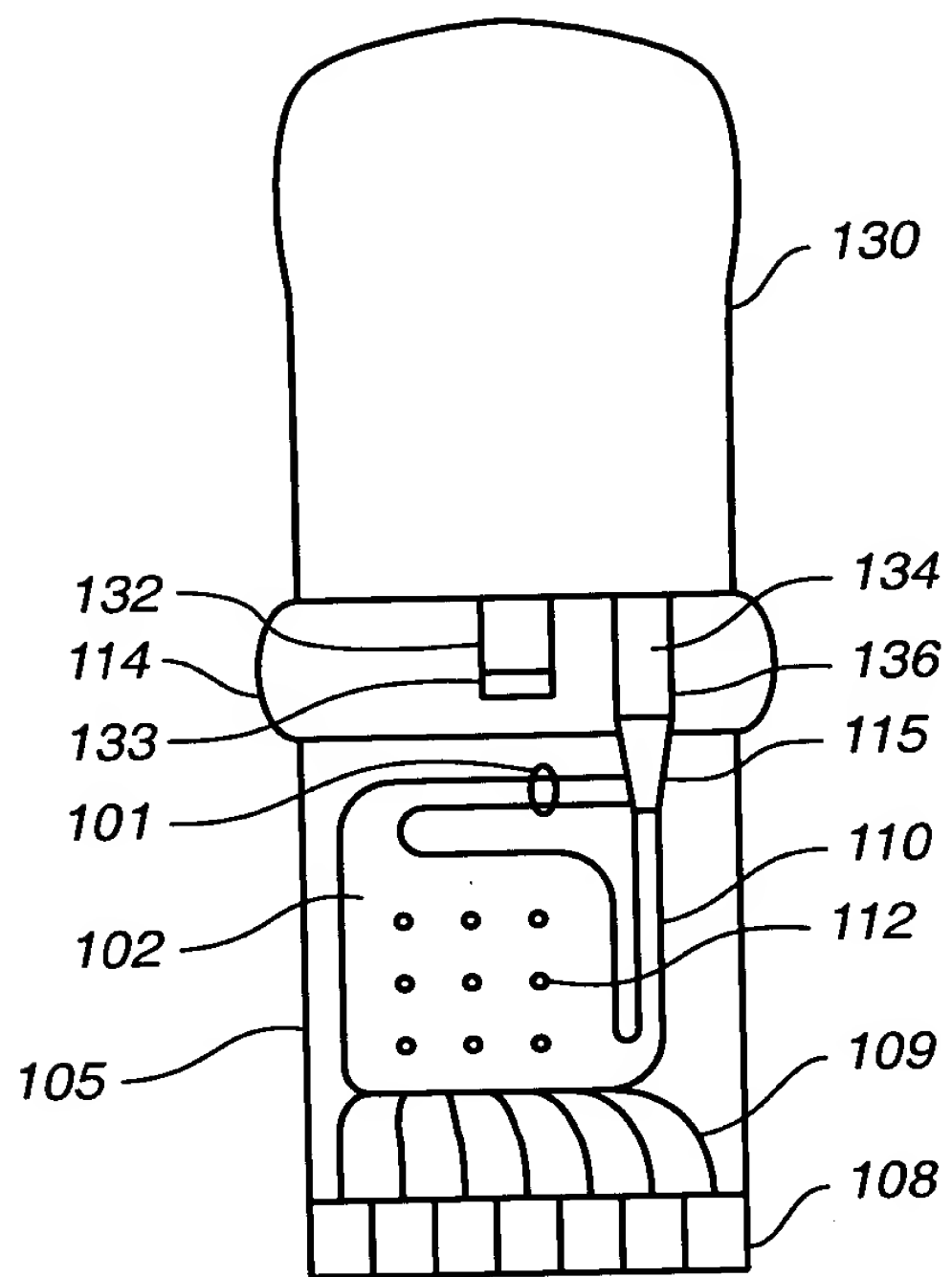
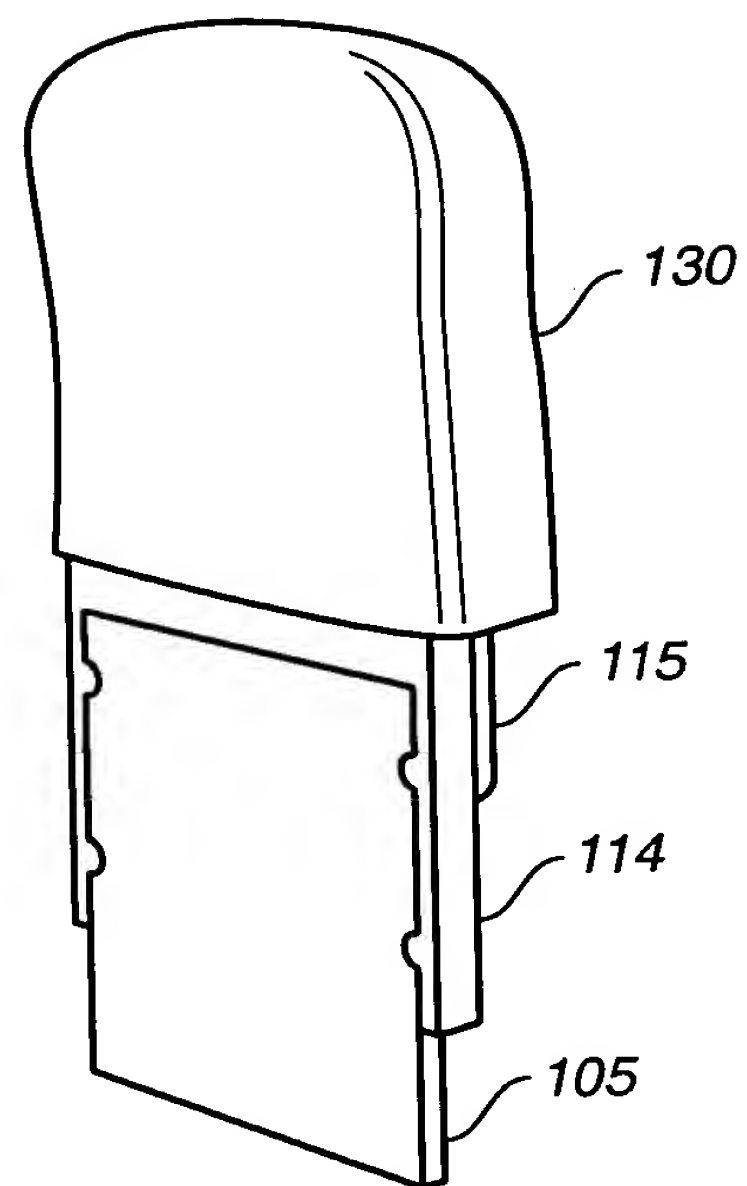
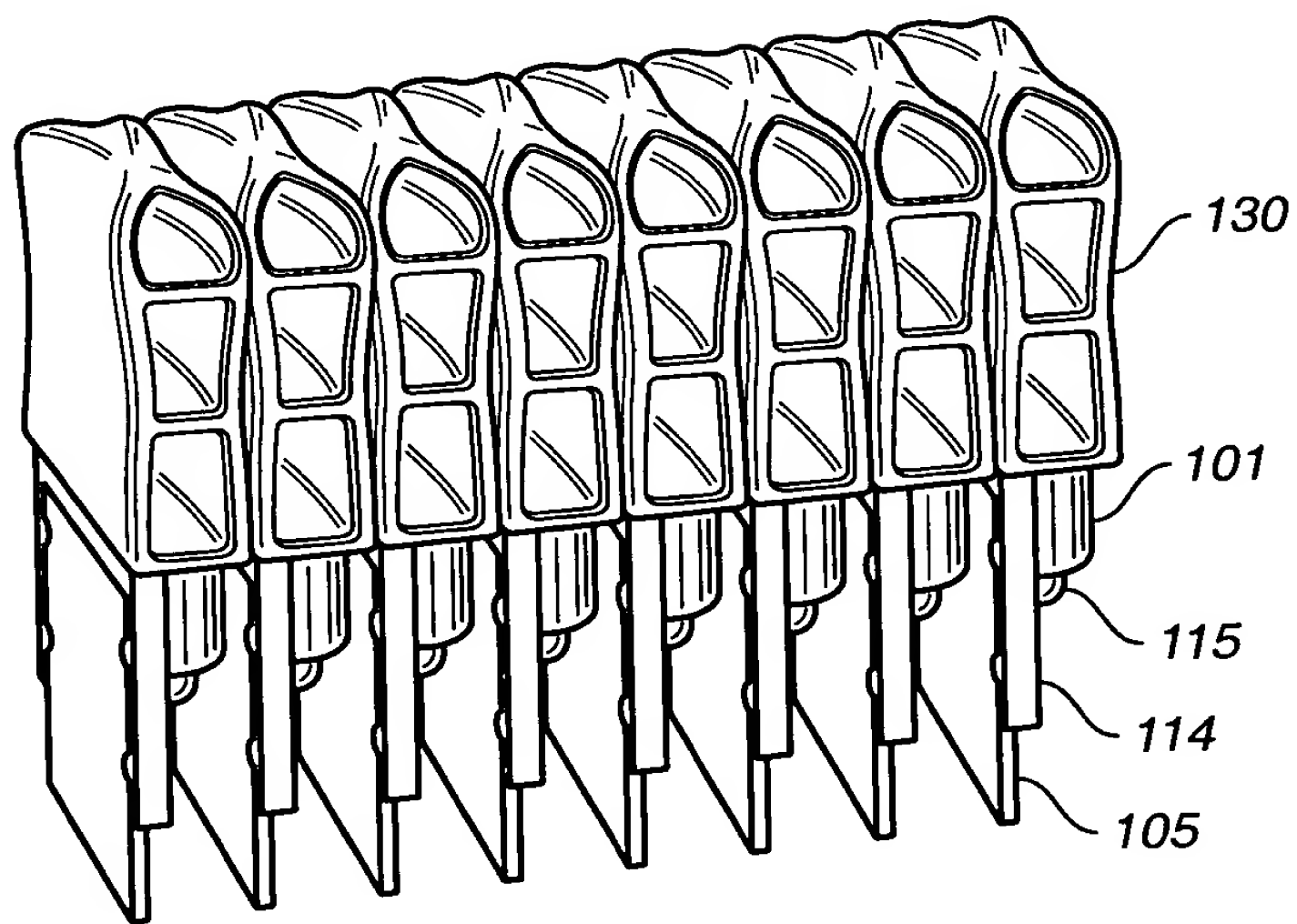


FIG. 1K

FIG._2A**FIG._2B****FIG._2C**

**FIG. 3A****FIG. 3B**

**FIG._3C****FIG._3D****FIG._3E**

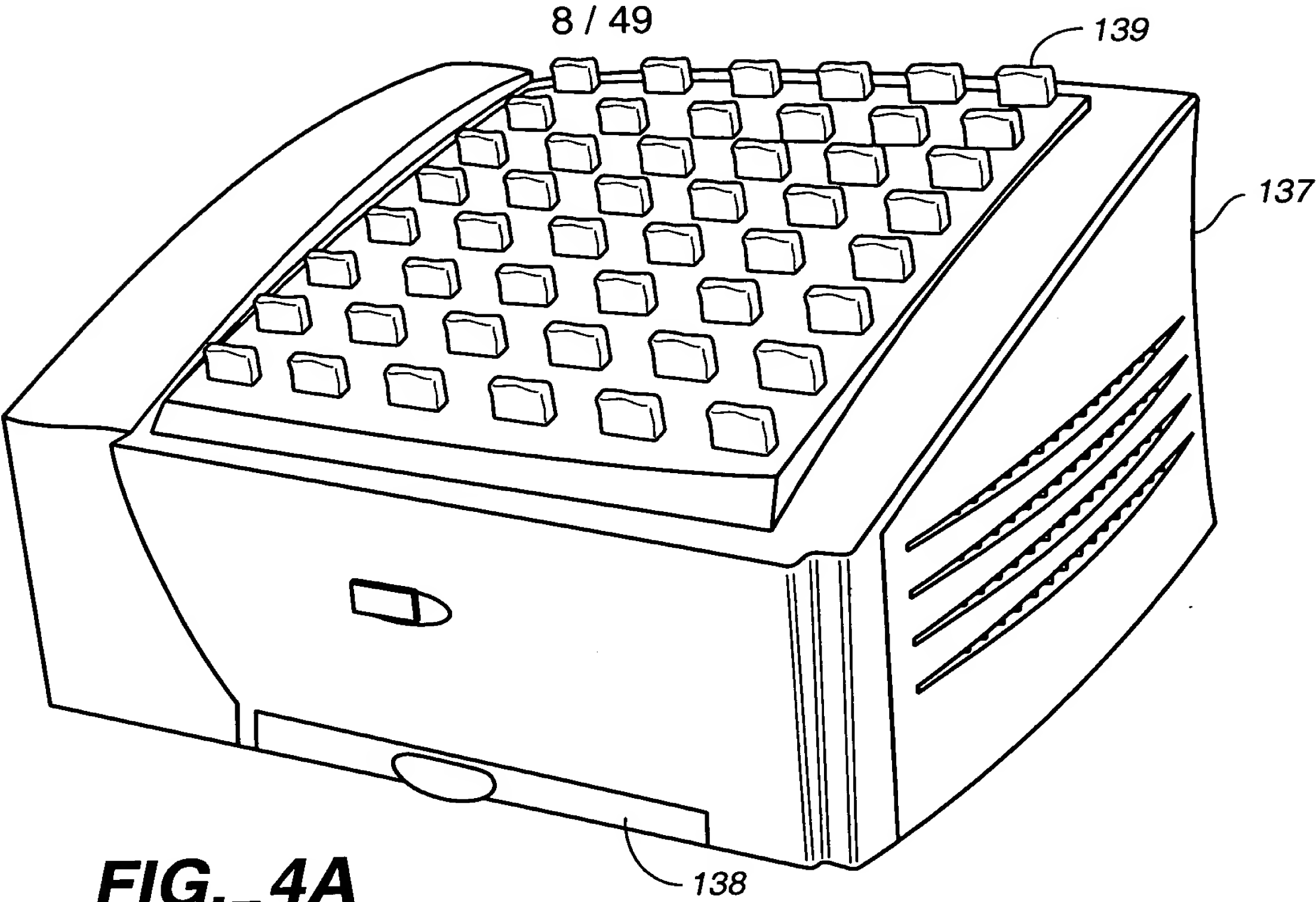


FIG. 4A

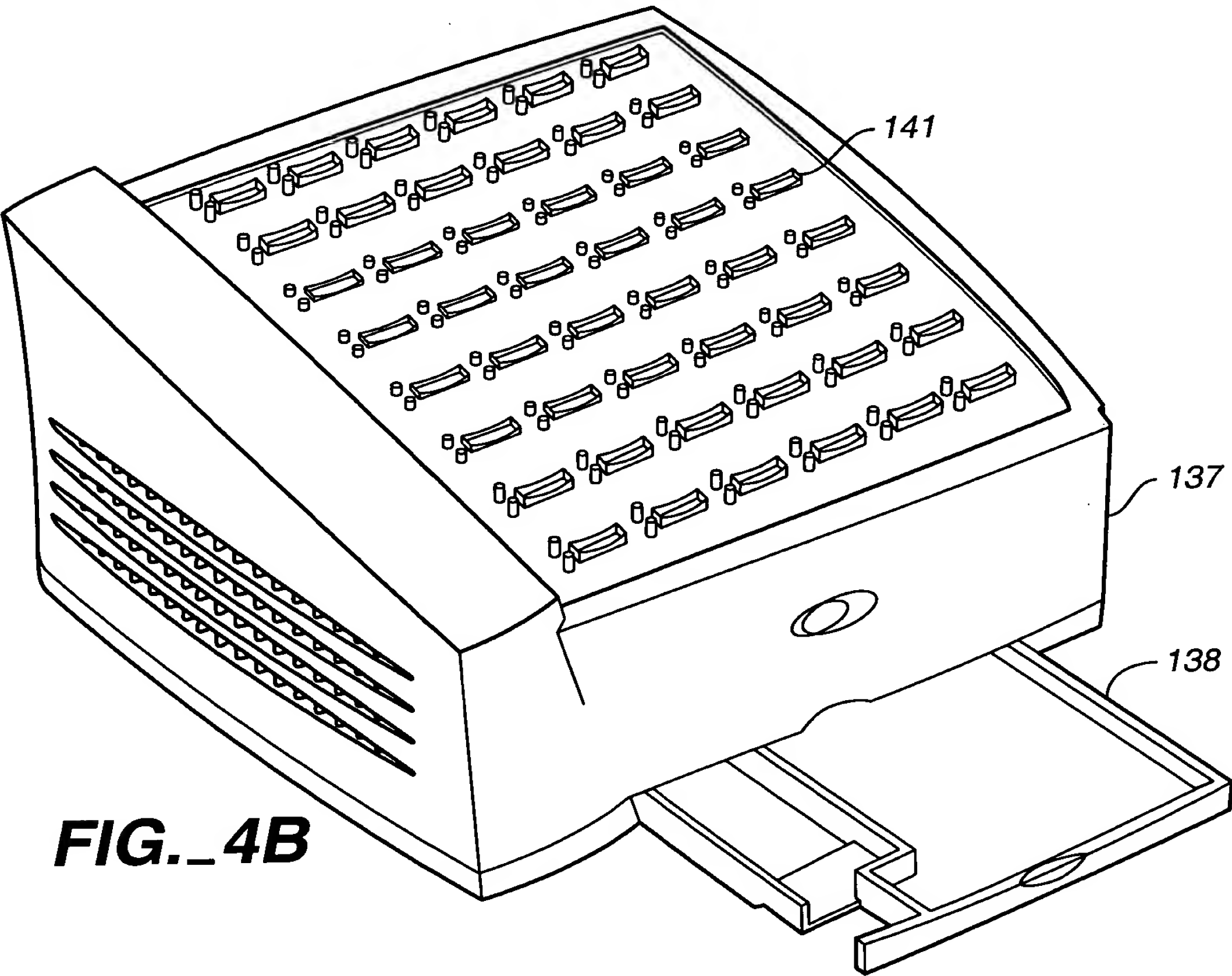


FIG. 4B



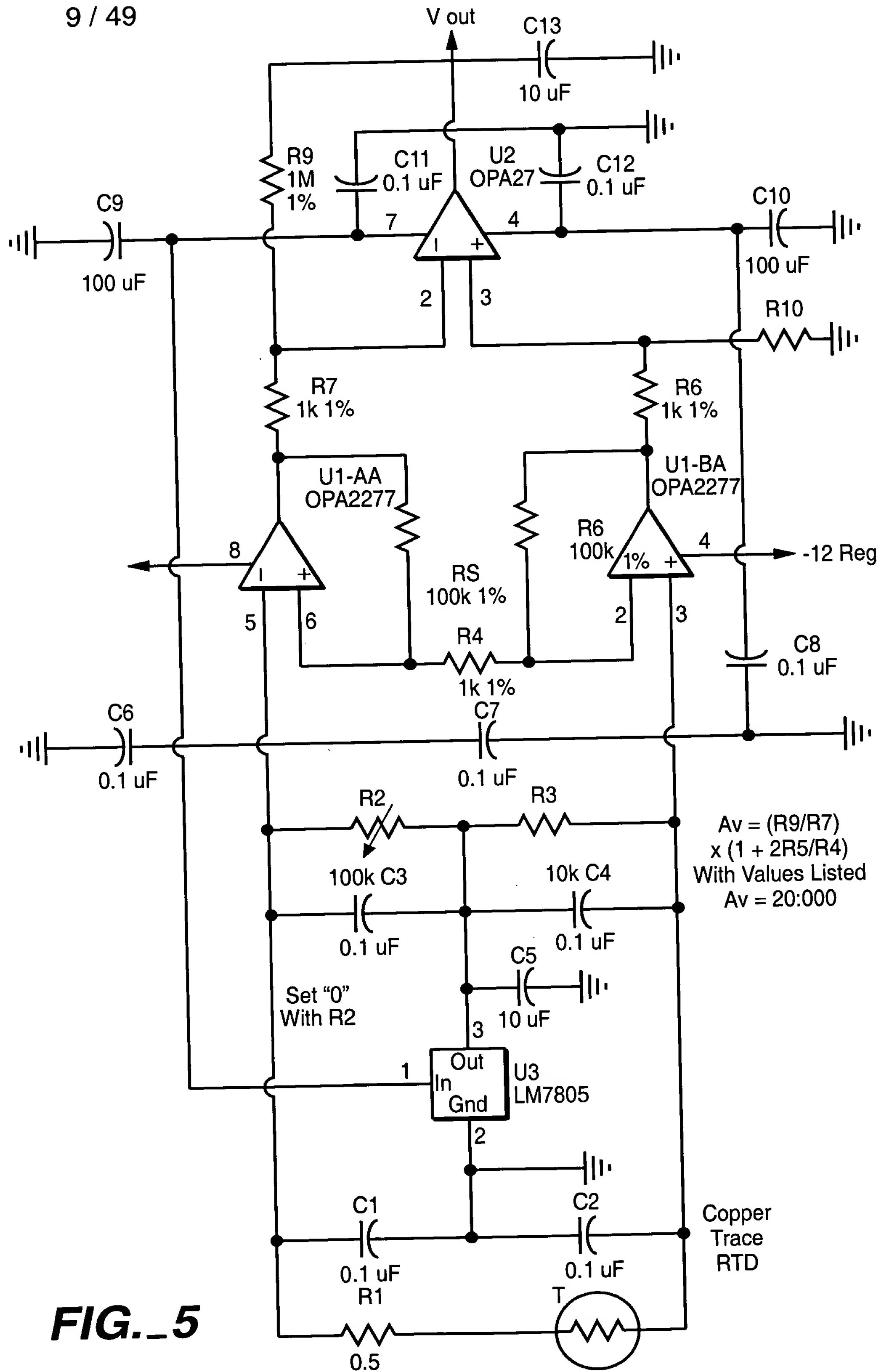


FIG. 5

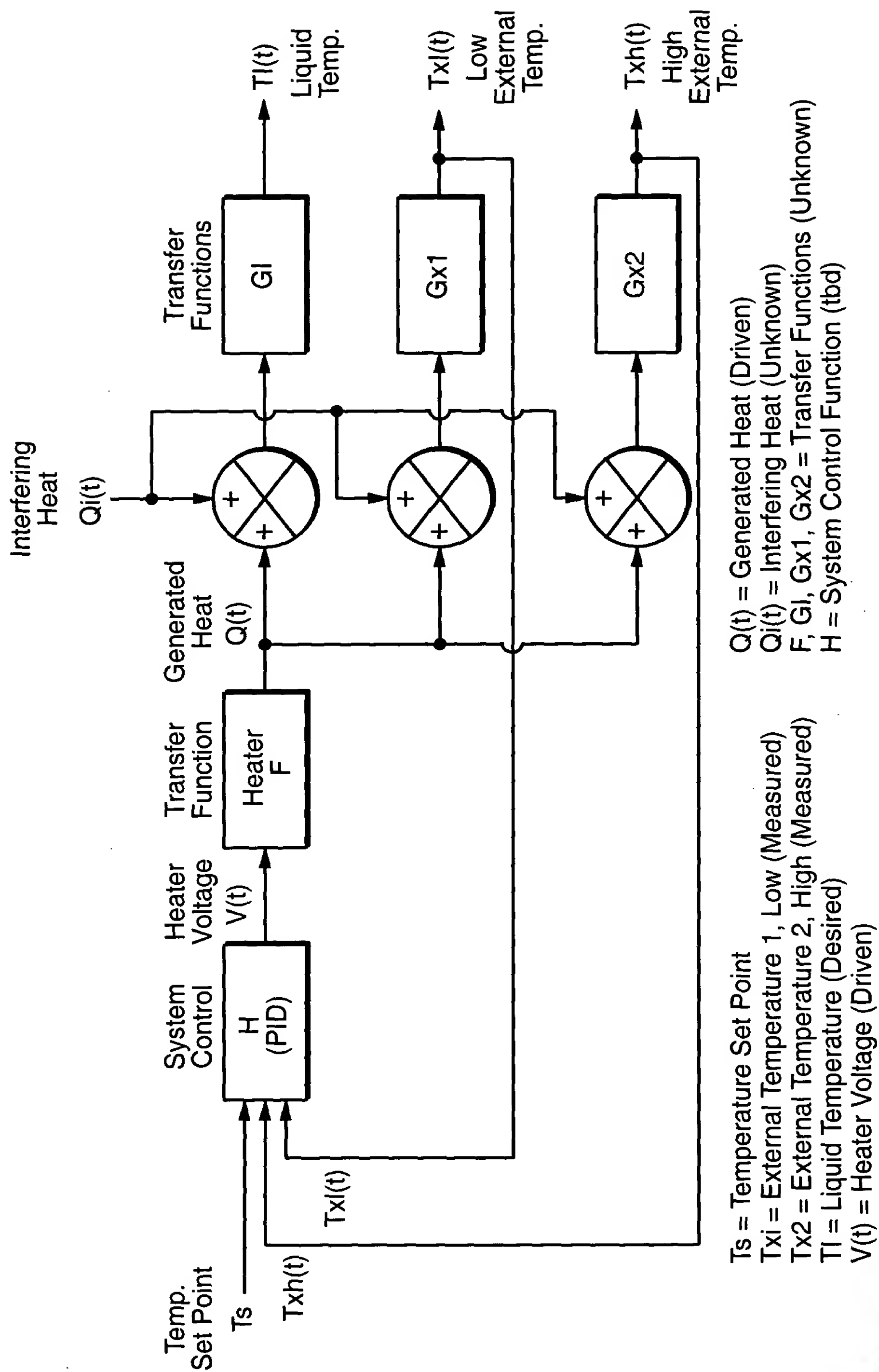


FIG. 6

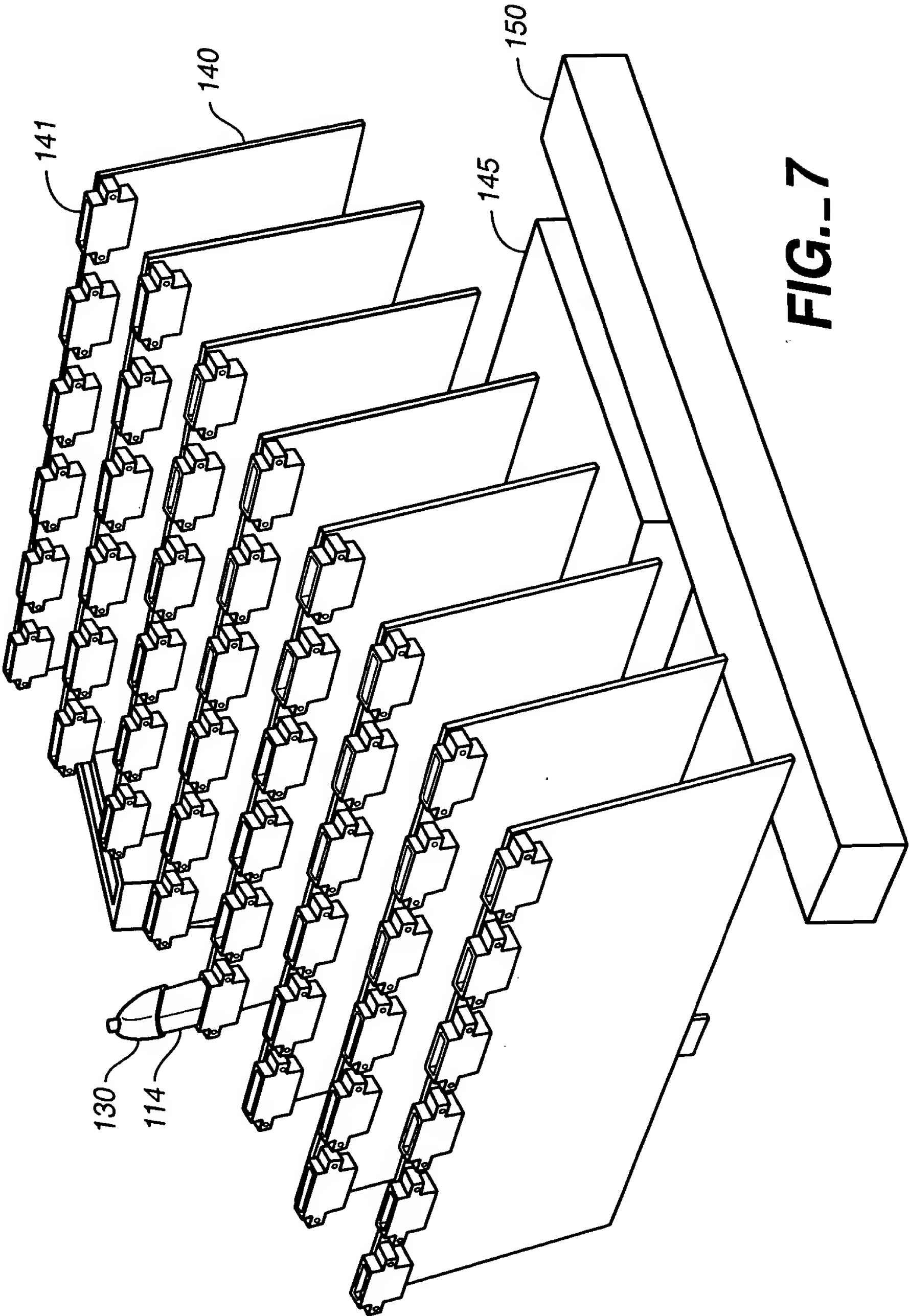
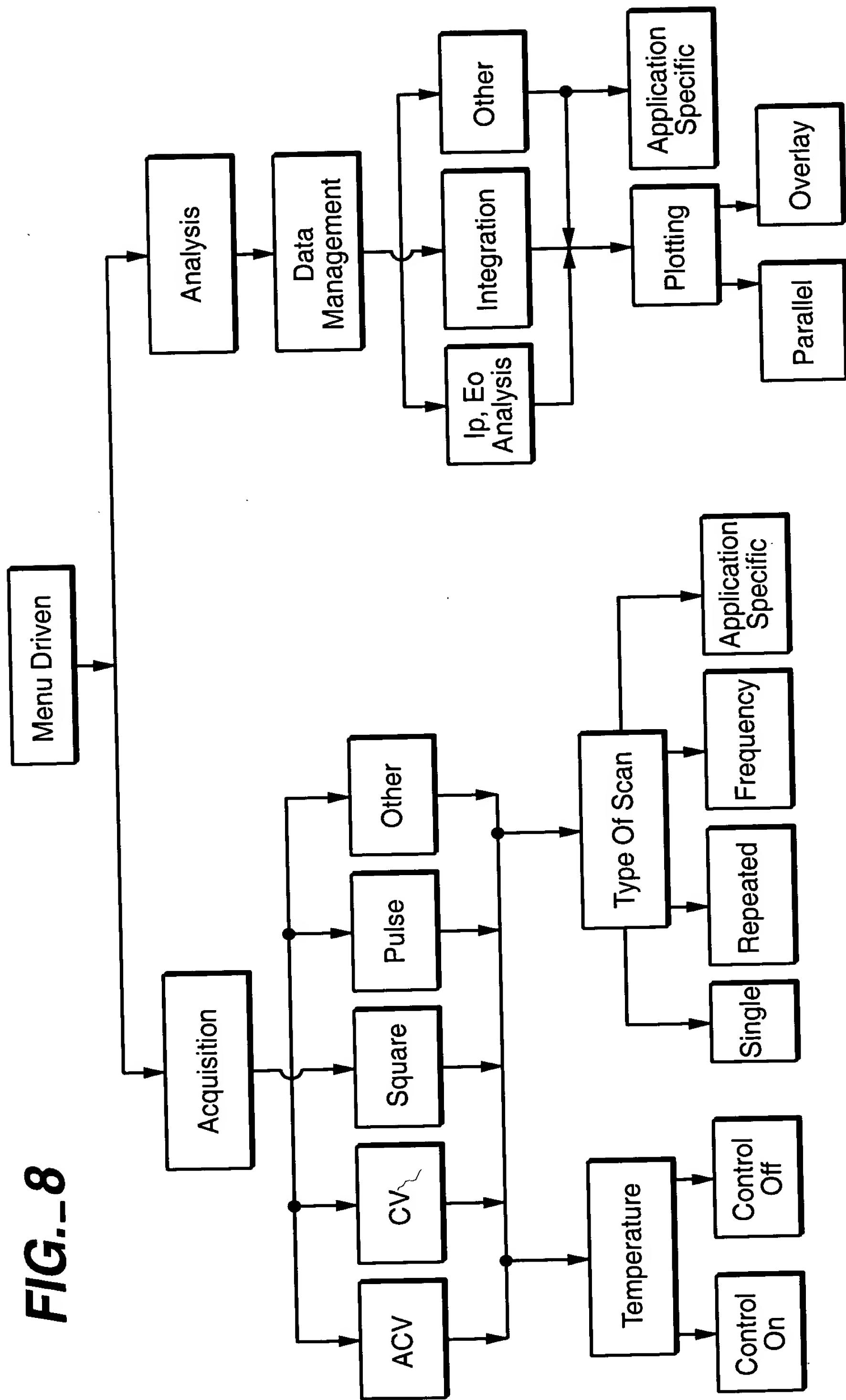
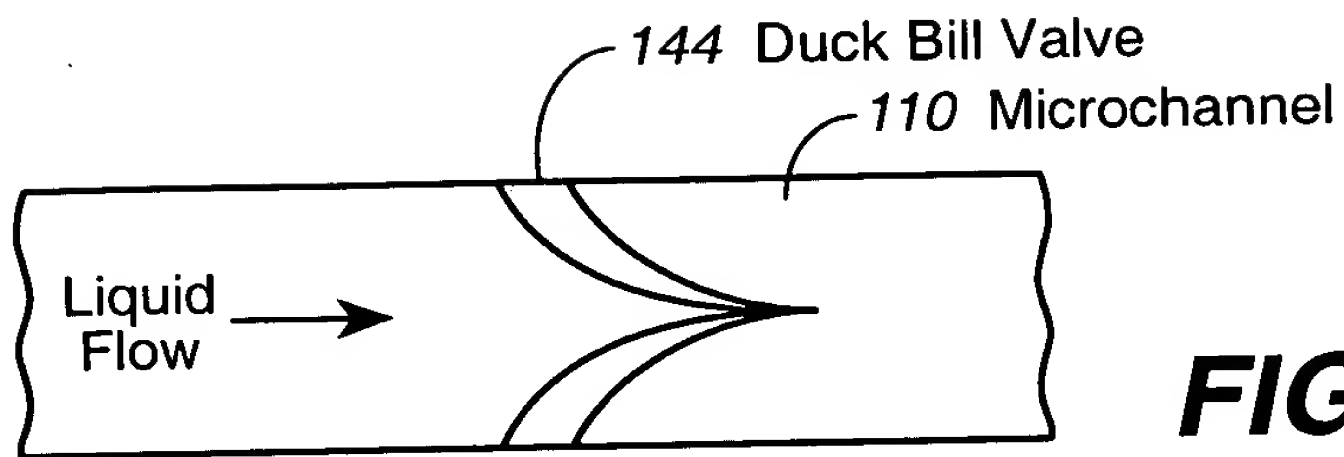
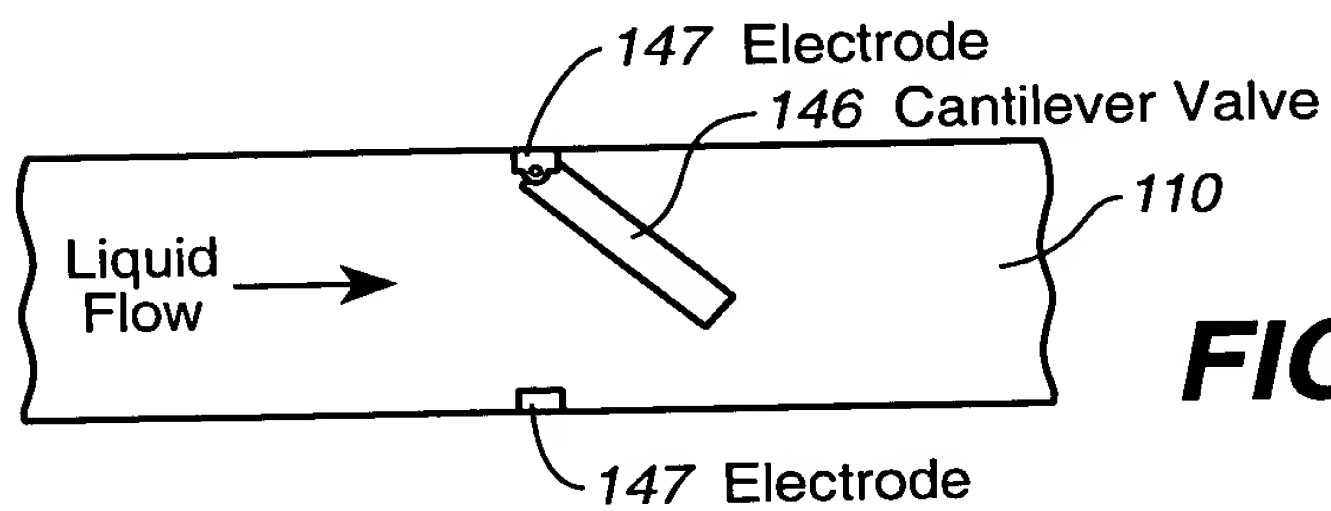
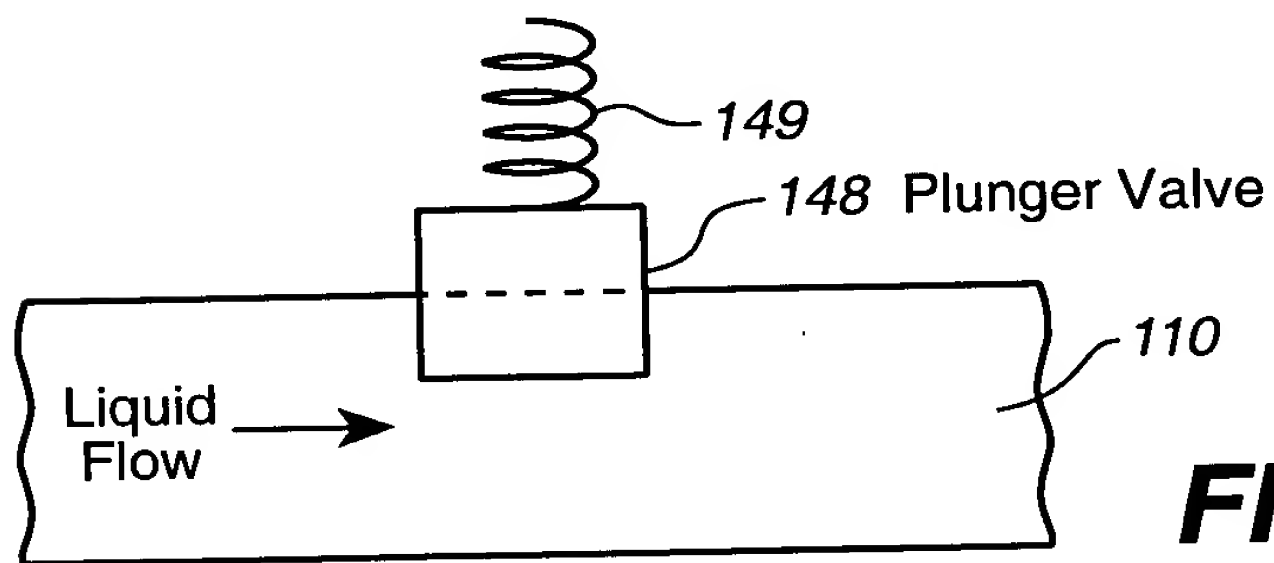
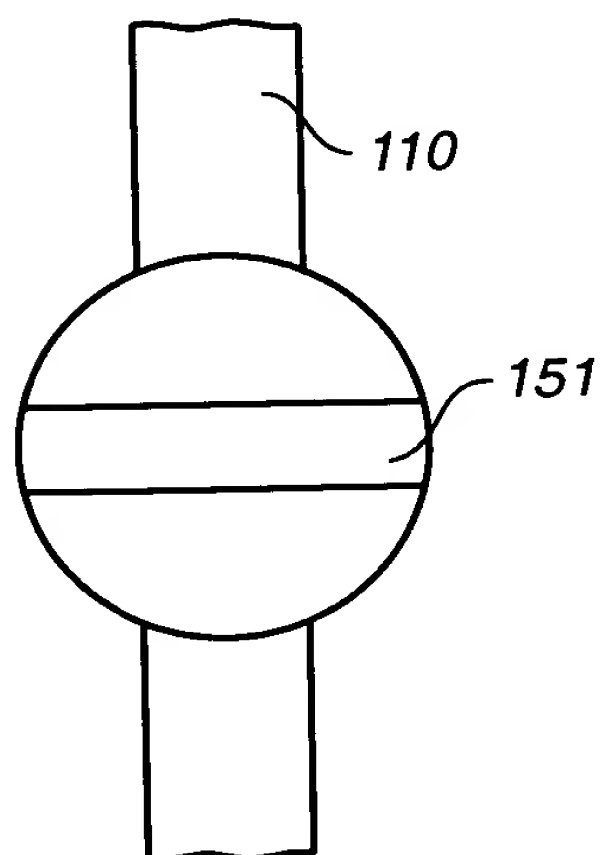
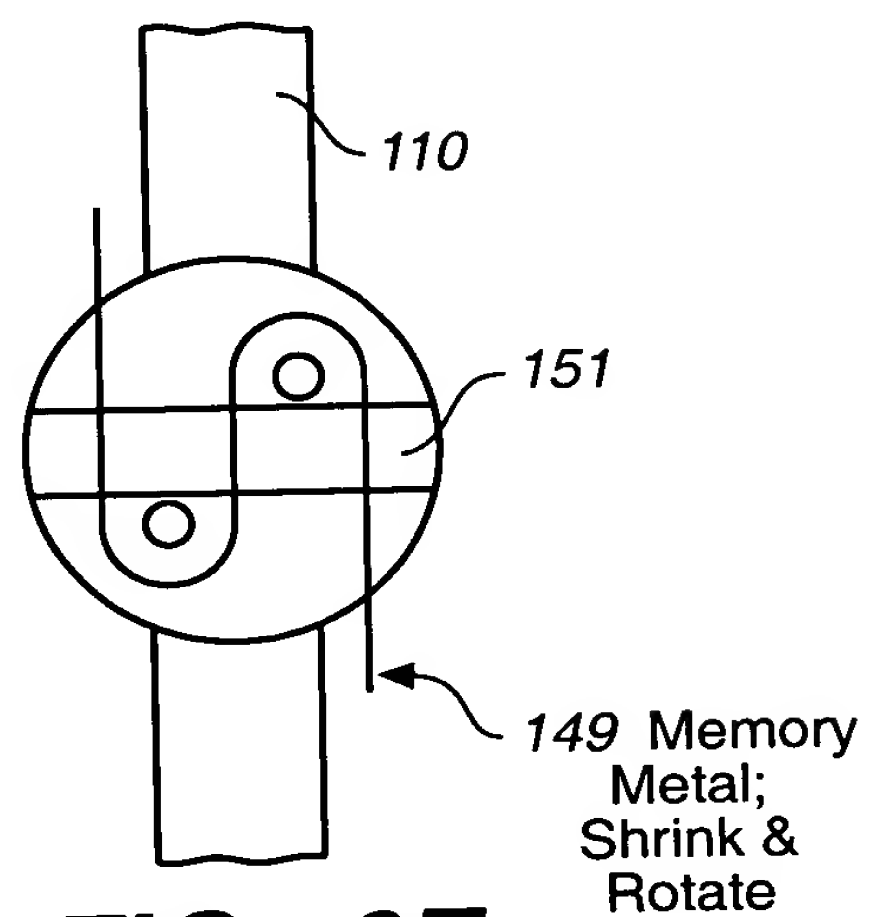
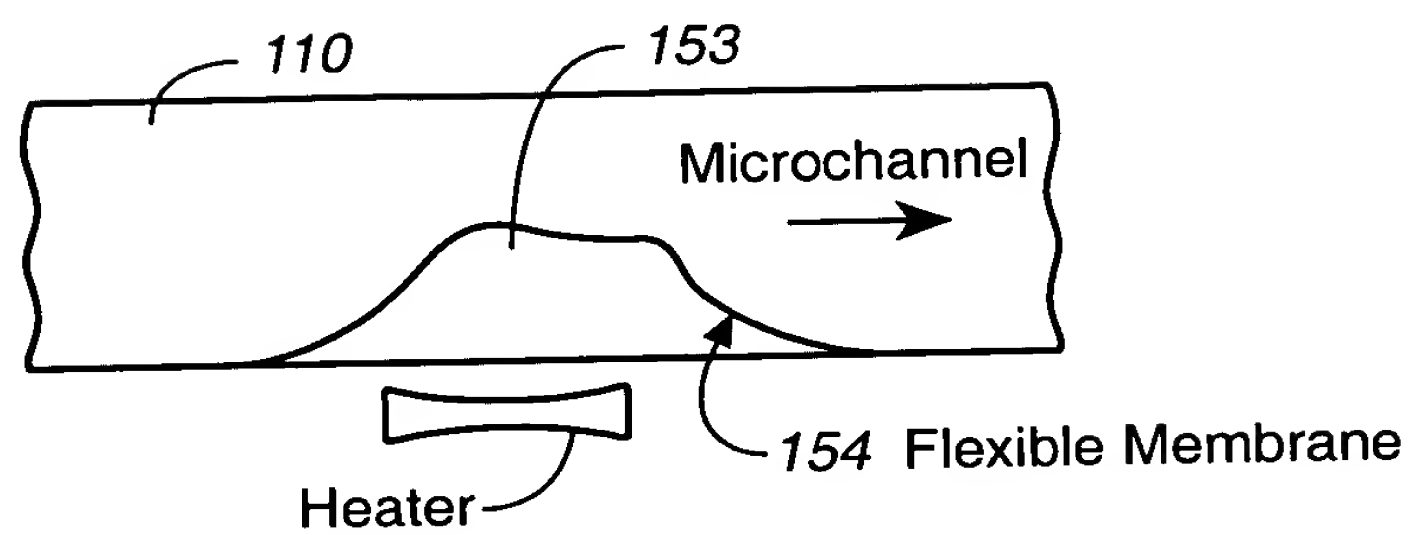
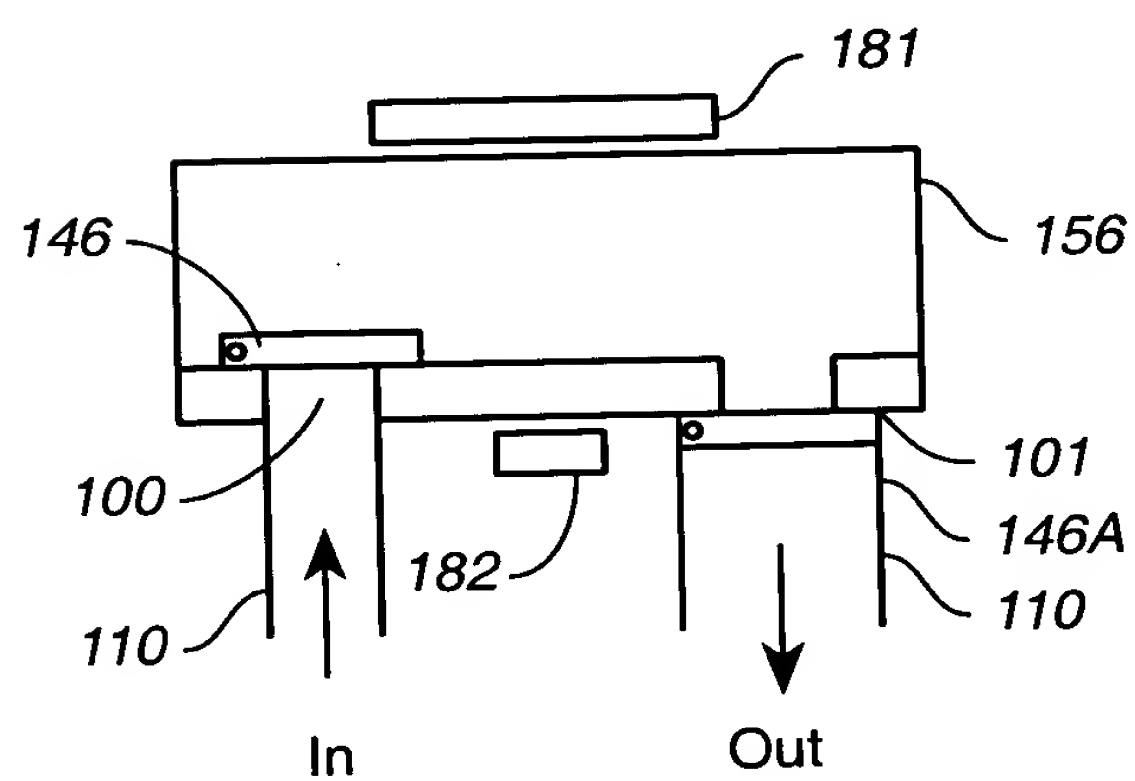
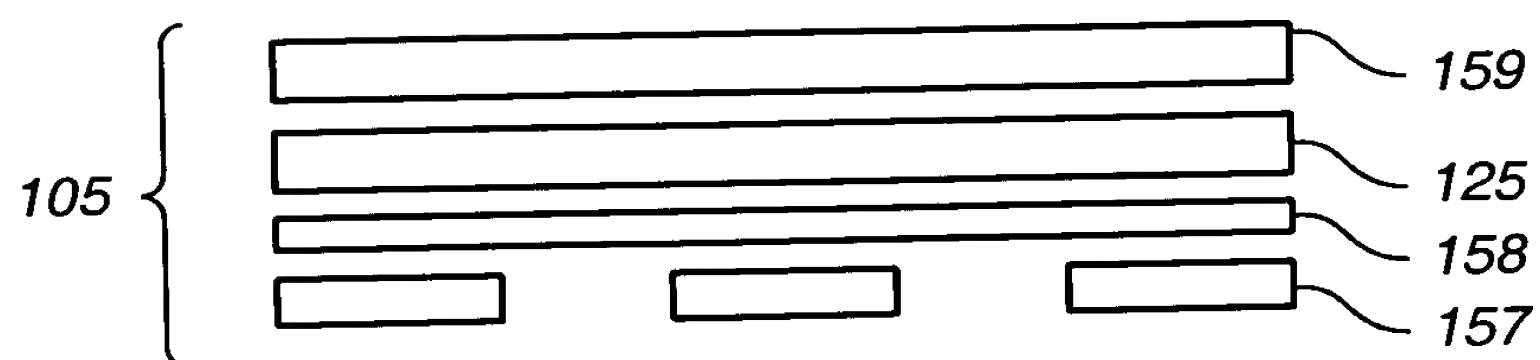


FIG. 7



13 / 49

**FIG._9A****FIG._9B****FIG._9C****FIG._9D****FIG._9E**

**FIG. 9F****FIG. 9G****FIG. 10A**

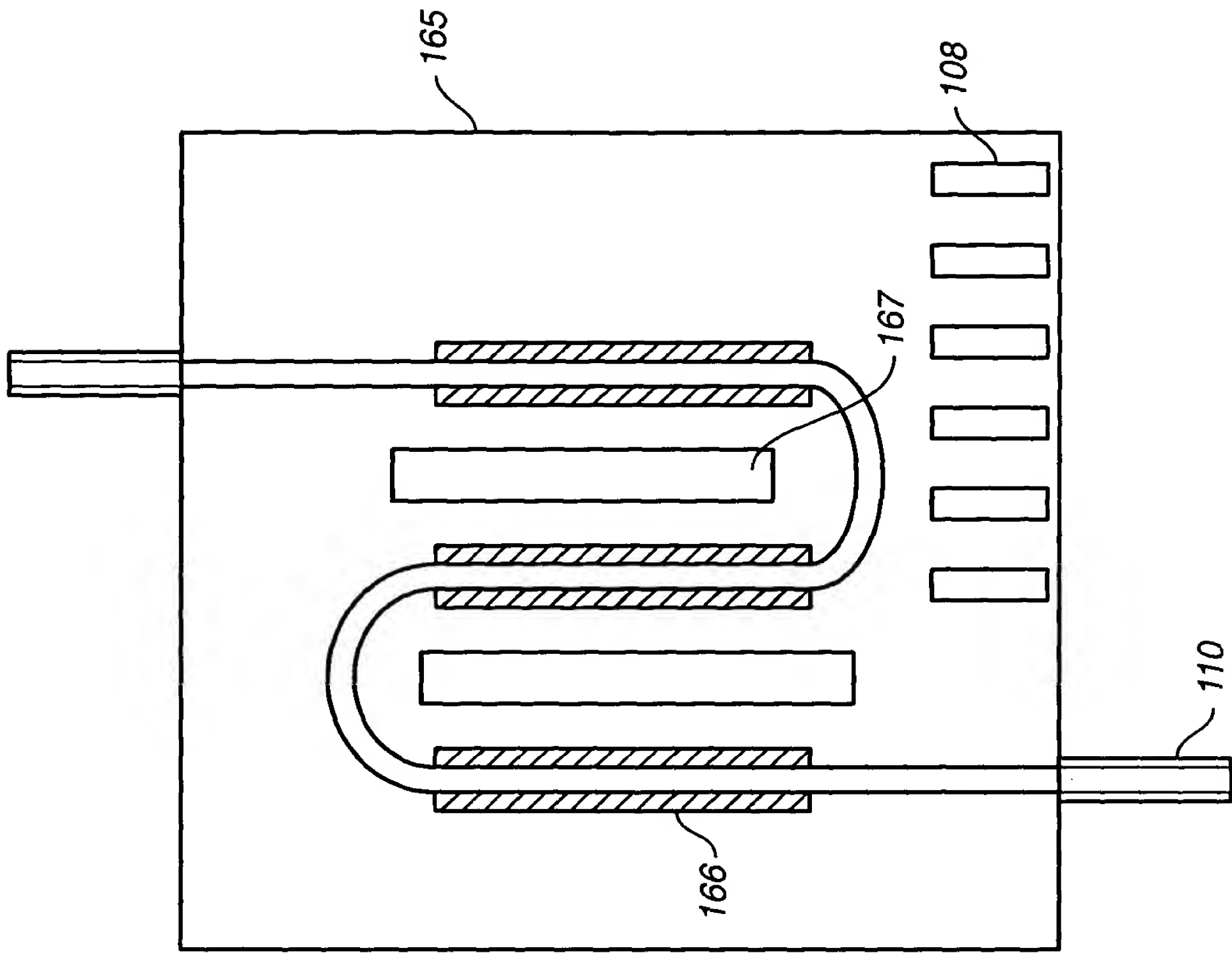


FIG. 10C

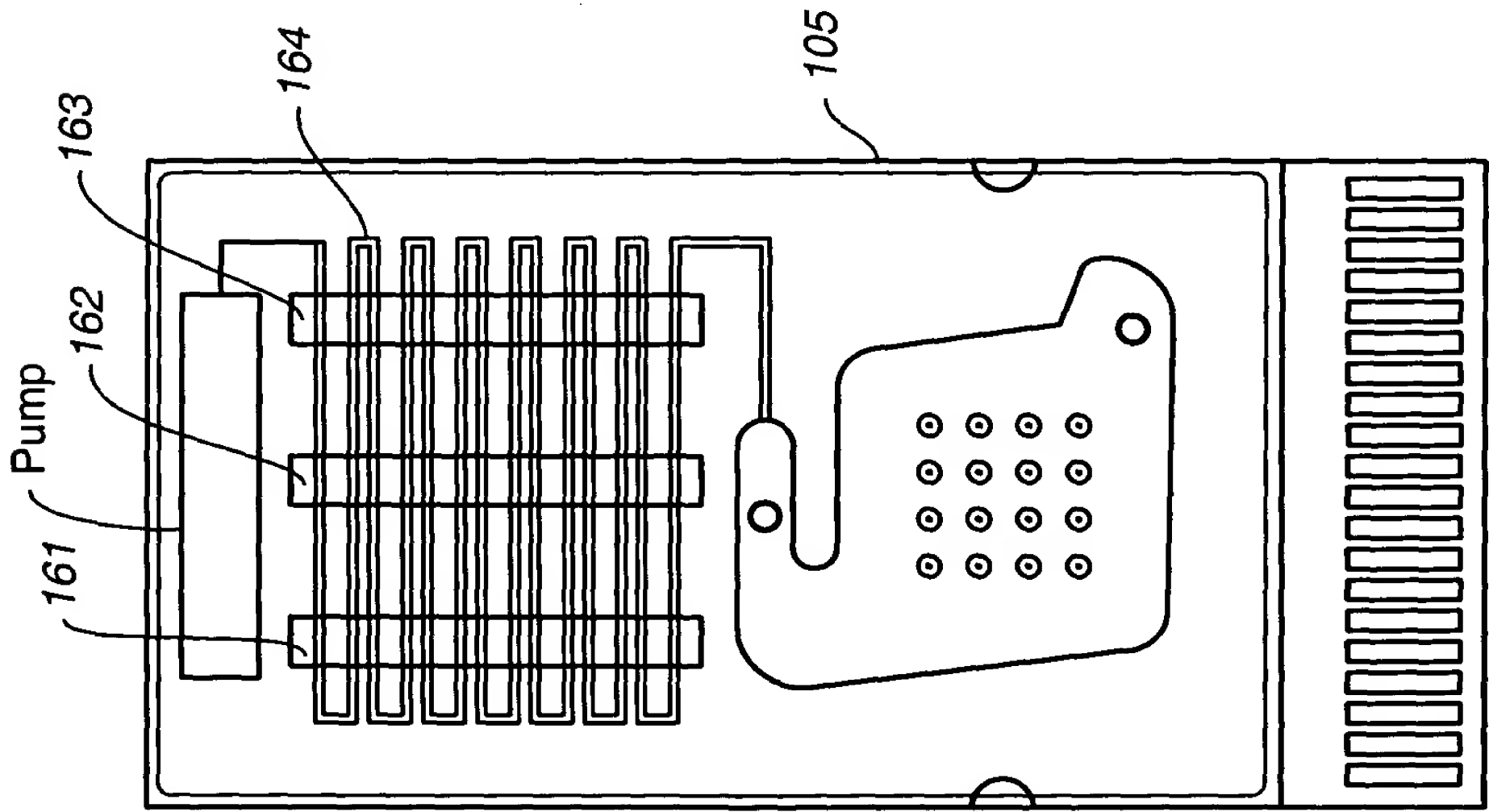
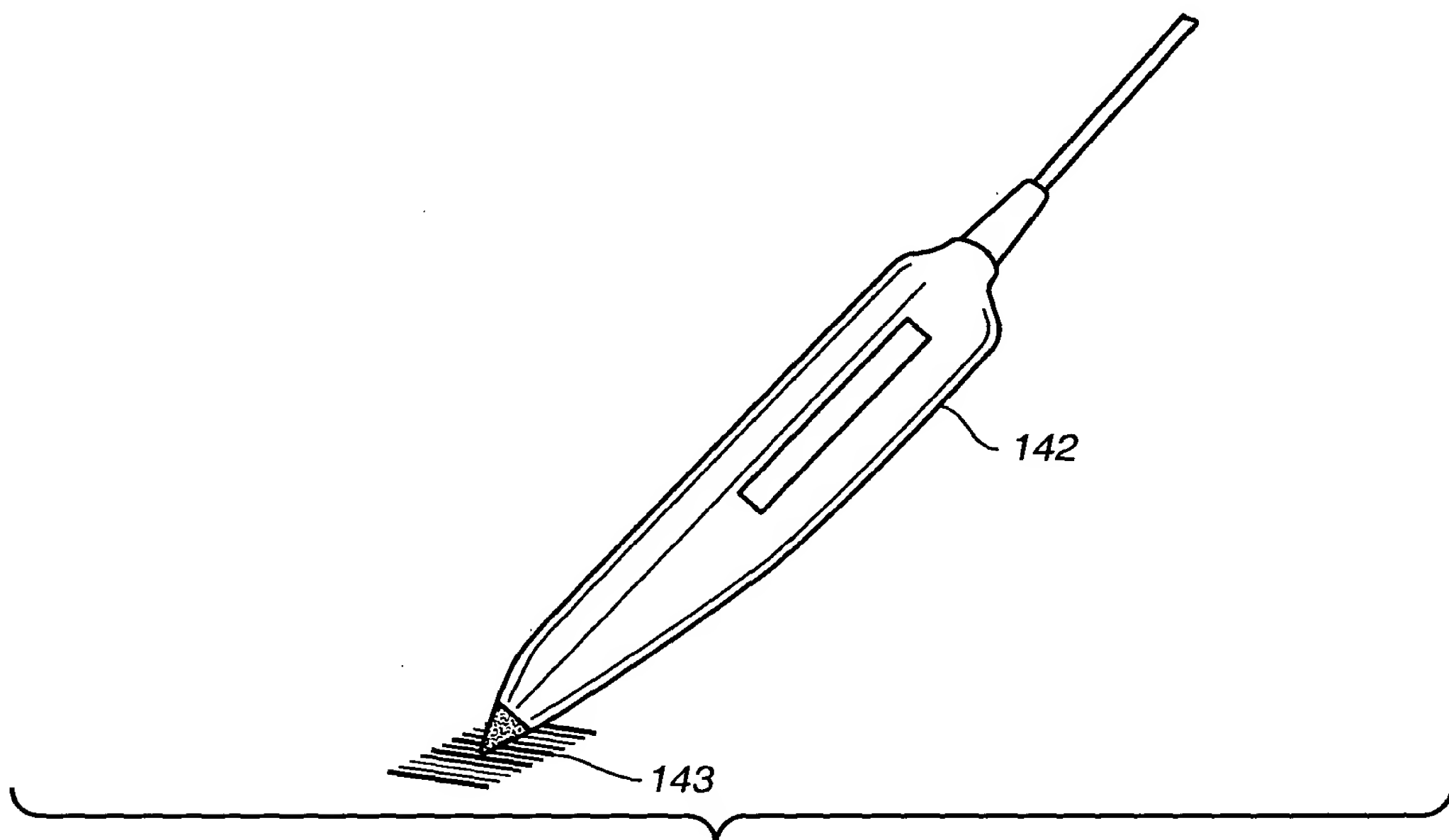


FIG. 10B

- Bar coded “reference” sheet, stored in tray under unit, with bar coded protocols, bar coded well and slot id’s, bar coded commands (e.g. “cancel”, “done”, etc.)
- Standard bar code wand (preferably with built-in decoder), housed in the tray (hence hidden when not in use)
- Serial (RS-232/485) interface (preferred), or “keyboard wedge”
- Multi-code support (Code 39, Code 128, etc.)
- Bar code on chip carrier (1 code per “8 pack”), identifying test, batch, etc.
 - Peel off labels, with same code as on carrier, with each “8 pack”

**FIG. 11**

- Bar code usage scenario
 - User fills "8-pack" (all 8, or partially) from a 96 well plate, or from individual sample containers (PCR tubes, vacutainers, etc.)
 - Pull out tray (with bar code reference sheet) and grab wand
 - Scan "start" code
 - Scan protocol code from sheet (will remain in effect until "done" is scanned)
 - Scan chip code from carrier (will remain in effect until "done" is scanned)
 - For each cartridge, user will
 - insert the cartridge in an open slot. Unit senses new chip automatically
 - scan the sample ID by either
 - scanning 96 well plate bar code from plate and well code from sheet
 - or scanning unique sample ID from container
 - or scanning "no ID" from reference sheet
 - Scan "done" code. The protocol can' now be started on these cartridges



FIG._12

- Bar code concept benefits
 - No keyboard entry (all-routine setup can be entered via bar coding)
 - All routine entries accomplished while in front of unit (no going back & forth between PC & Hydra)
 - All bar code entries done from small, flat surface in front of unit
 - No need to label each chip or each slot (which would compromise appearance)
 - Uses small unobtrusive bar code wand, hidden when not in use
 - Is flexible with respect to sample container (tube, 96 well plate, etc.), chip usage (by row of 8, or by individual chip), and lab bar coding method



FIG._13

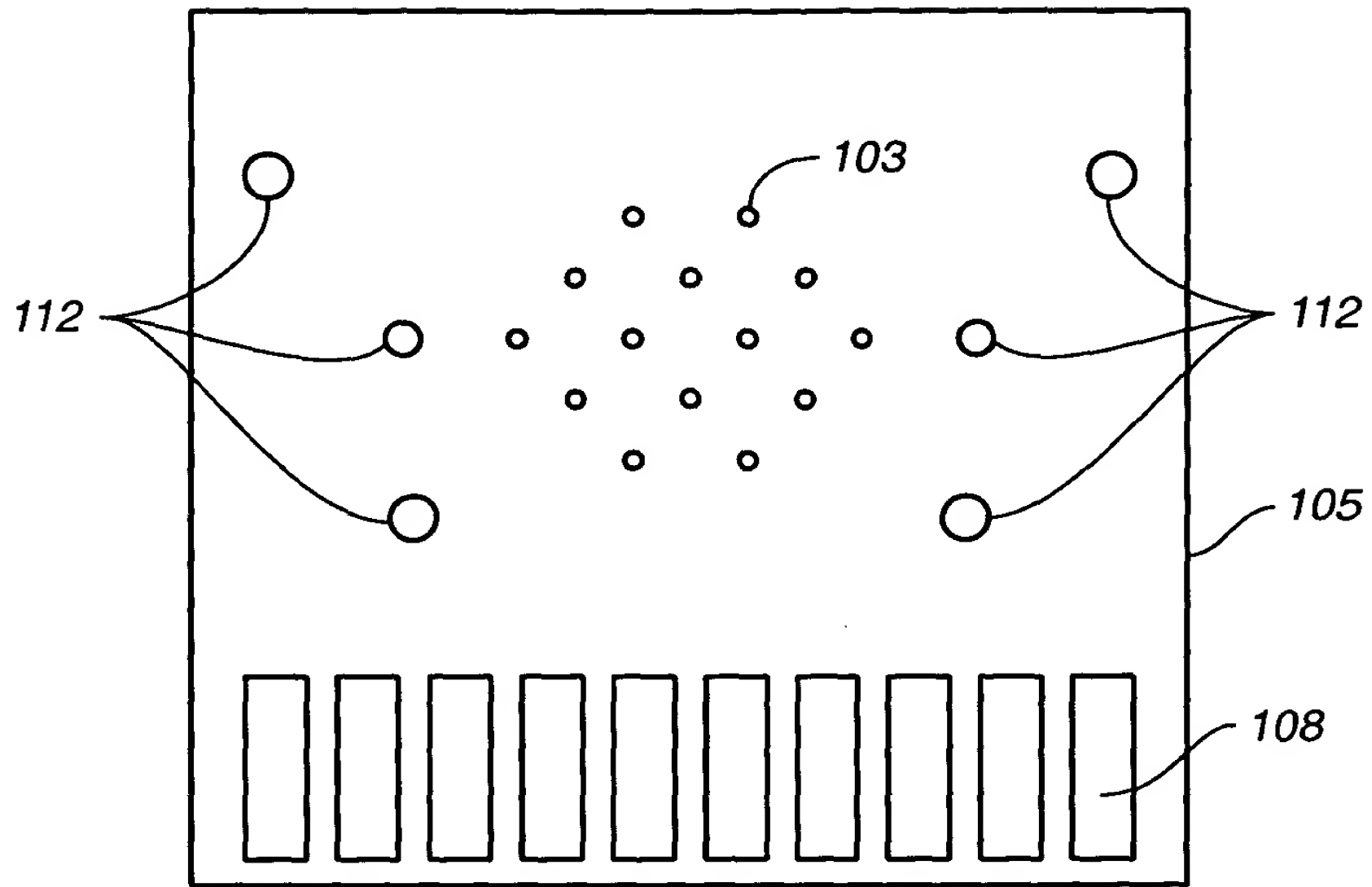


FIG. 14A

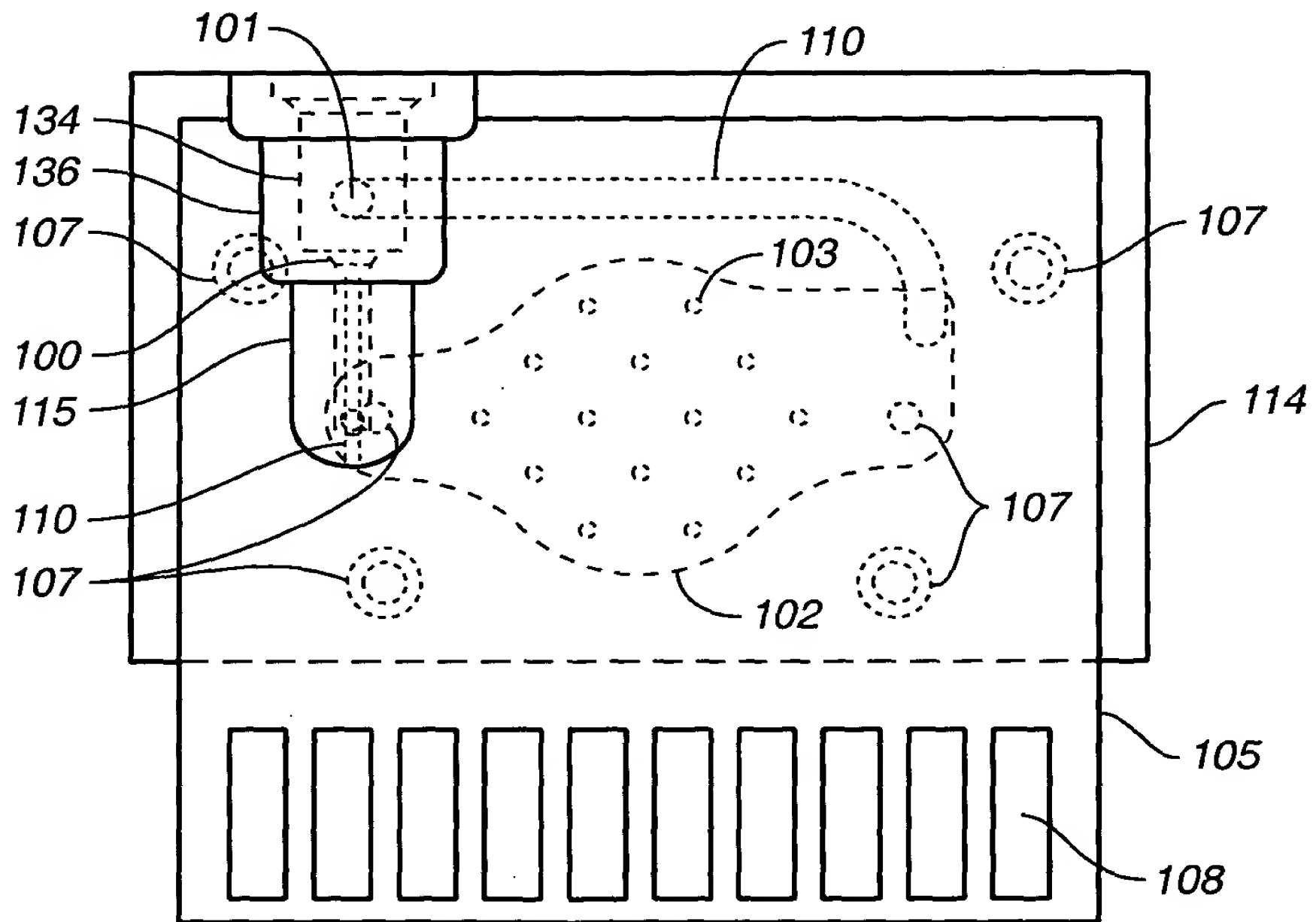


FIG. 14B

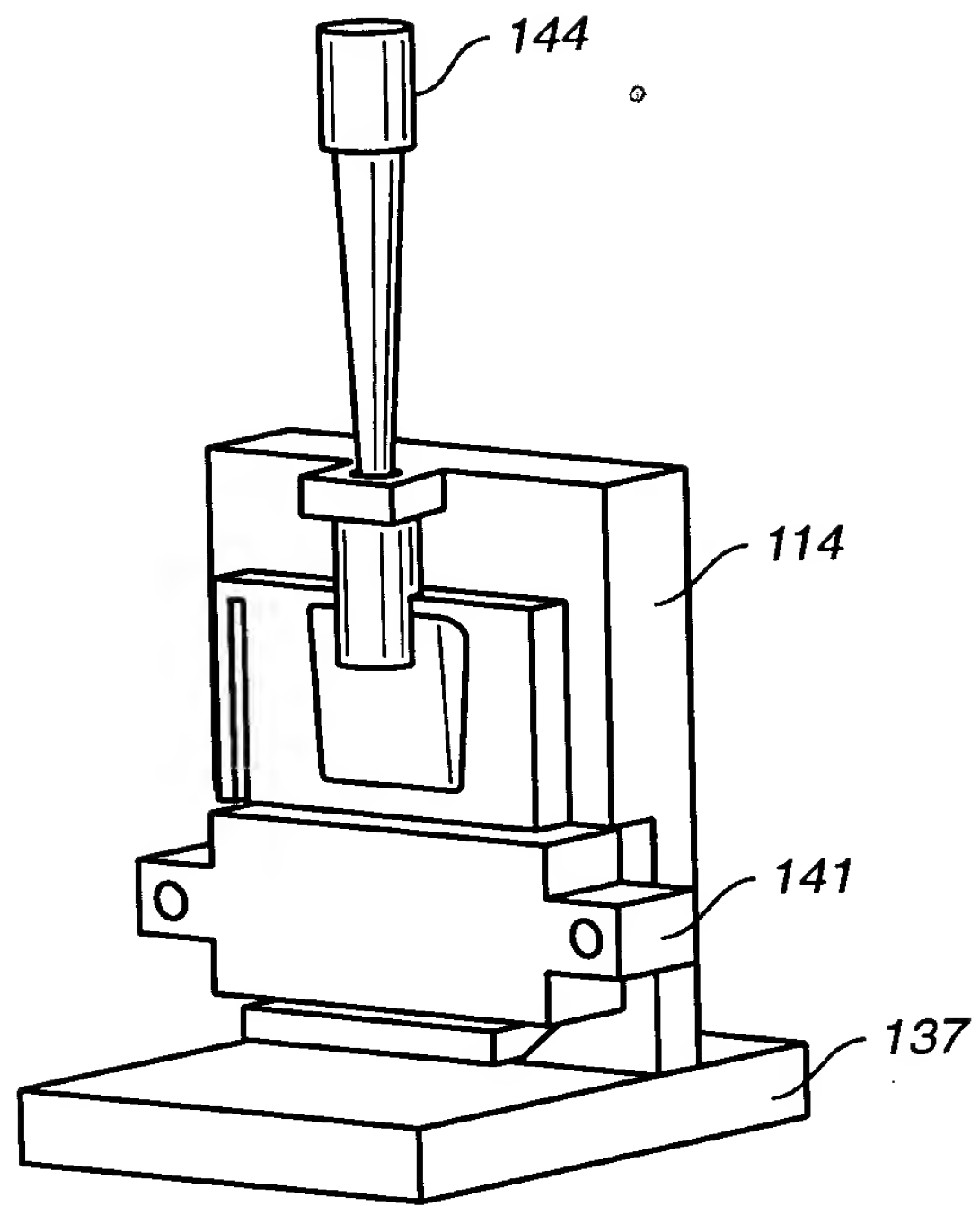
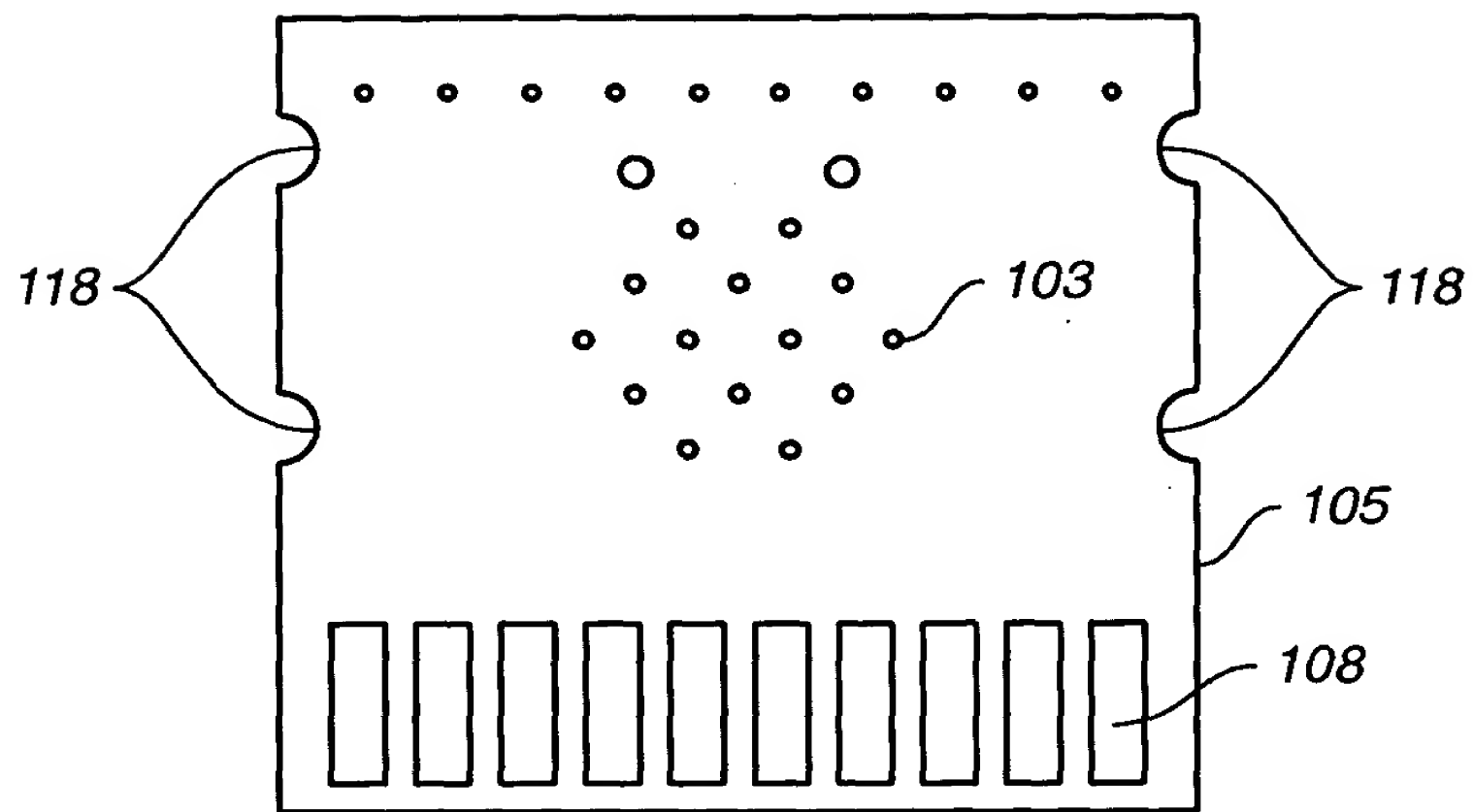
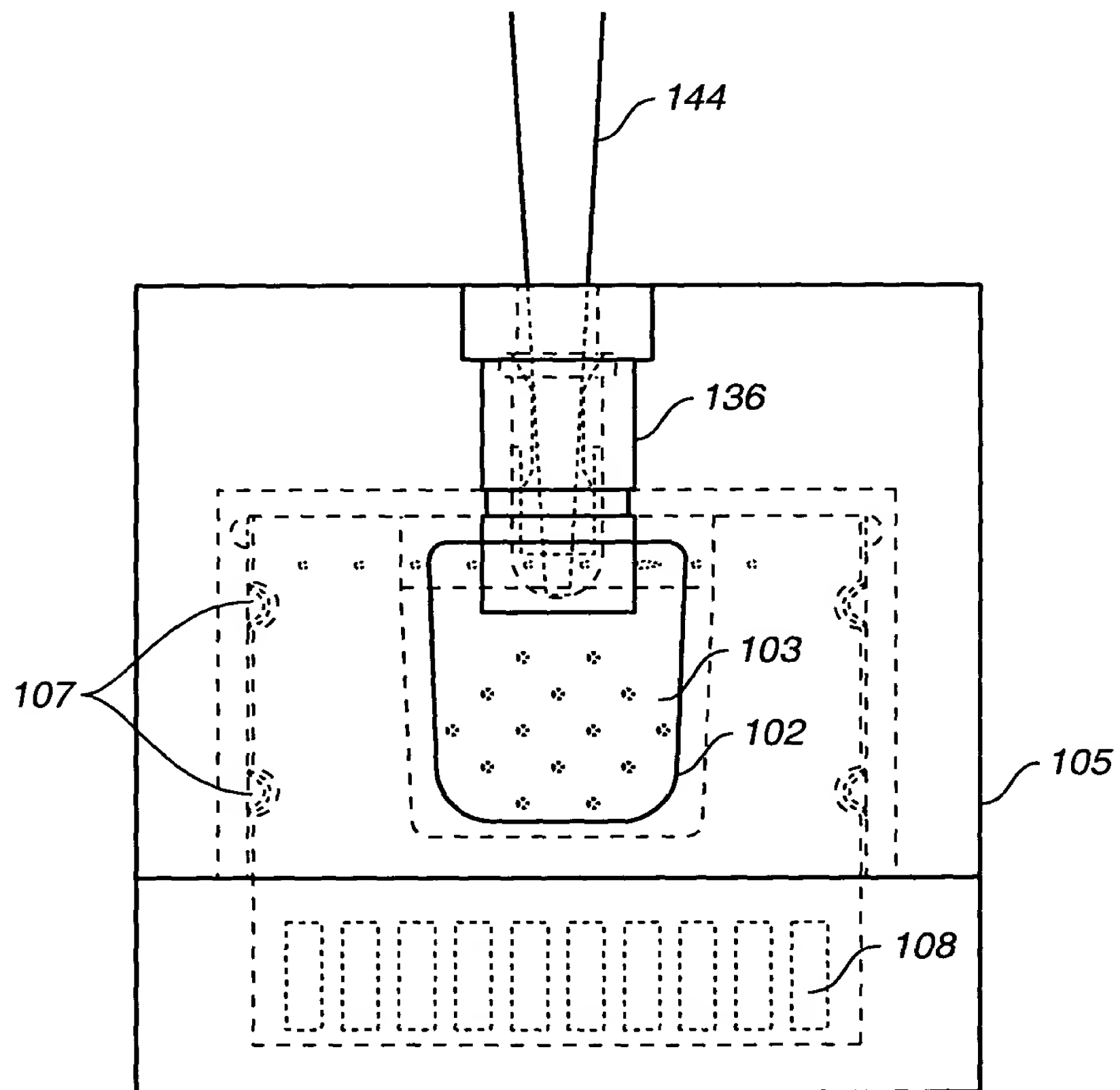
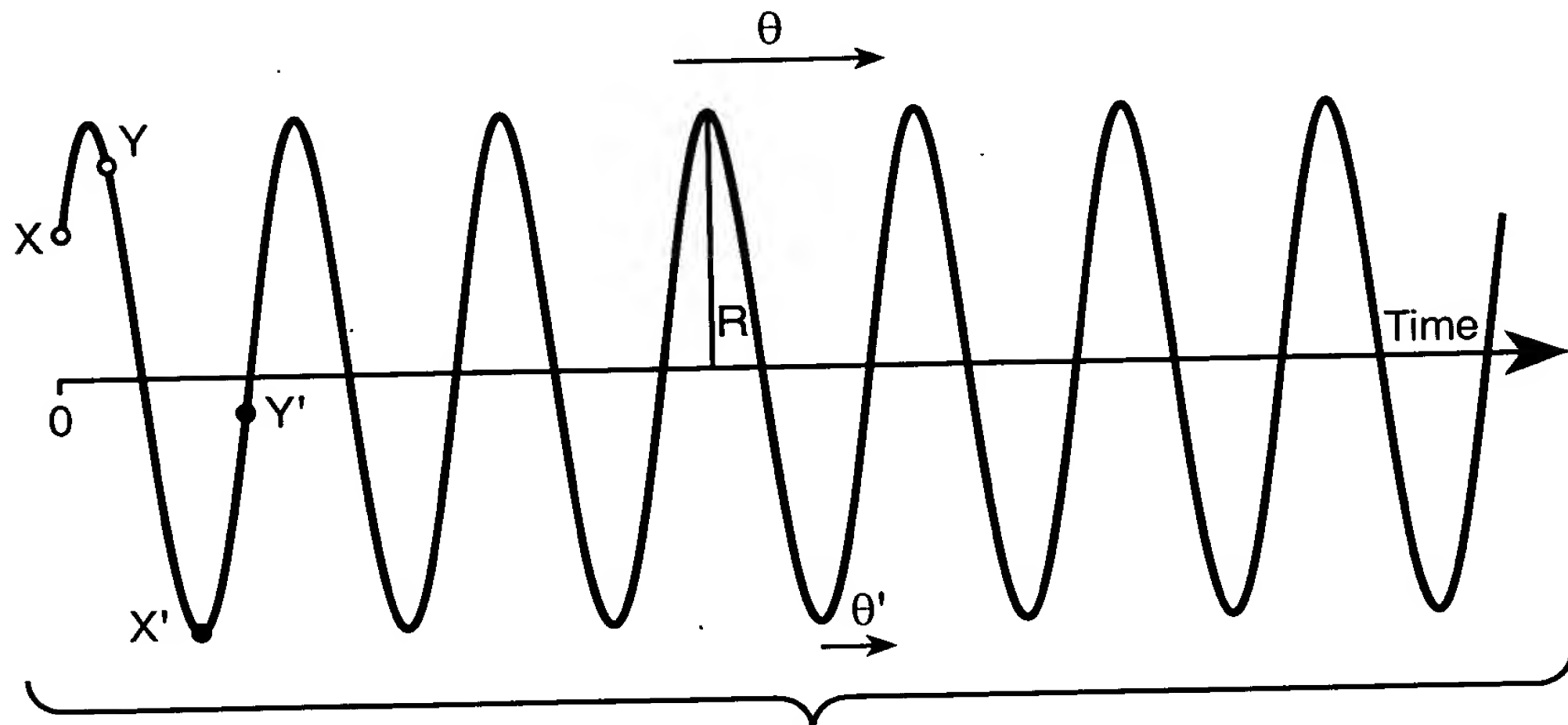
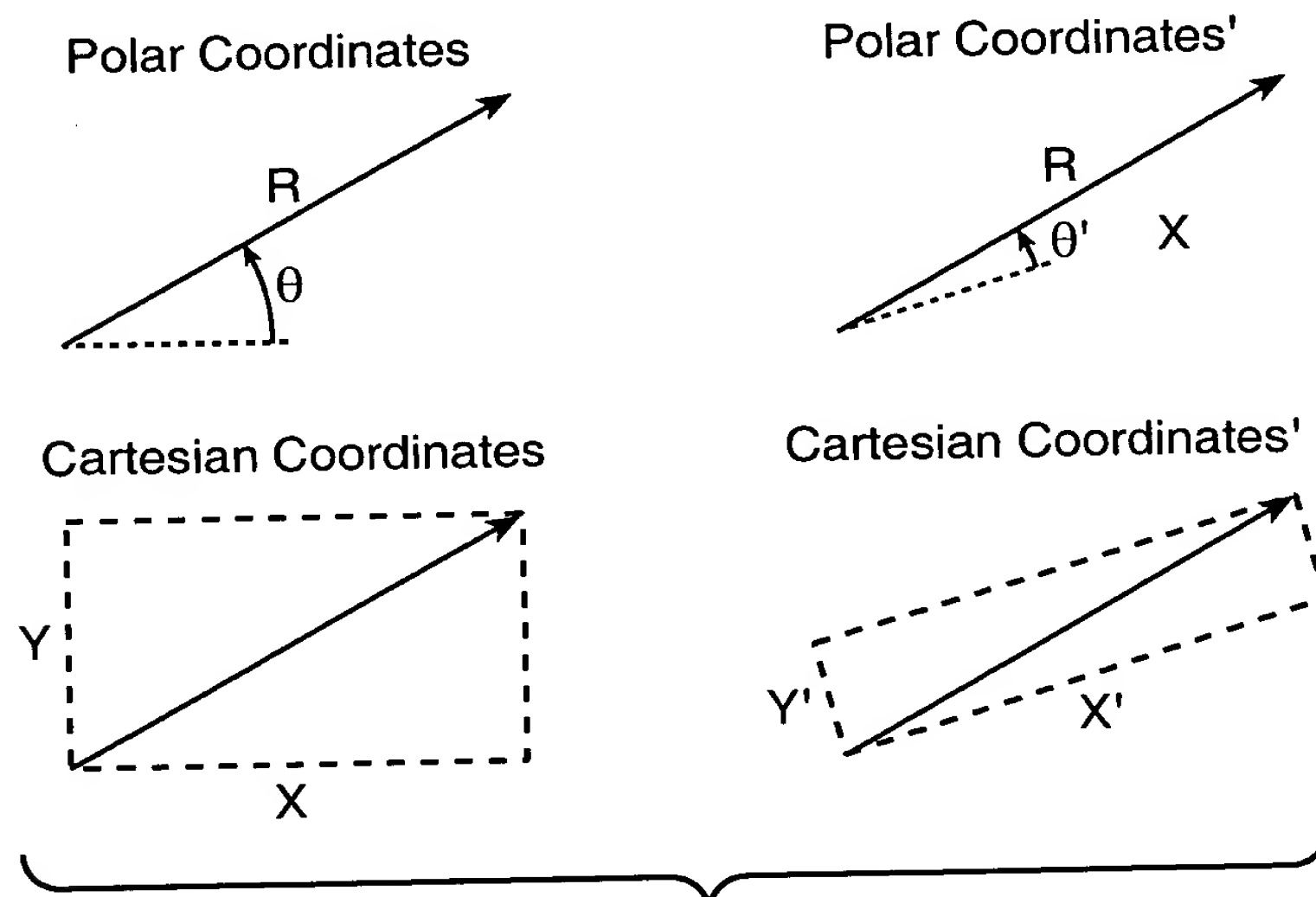


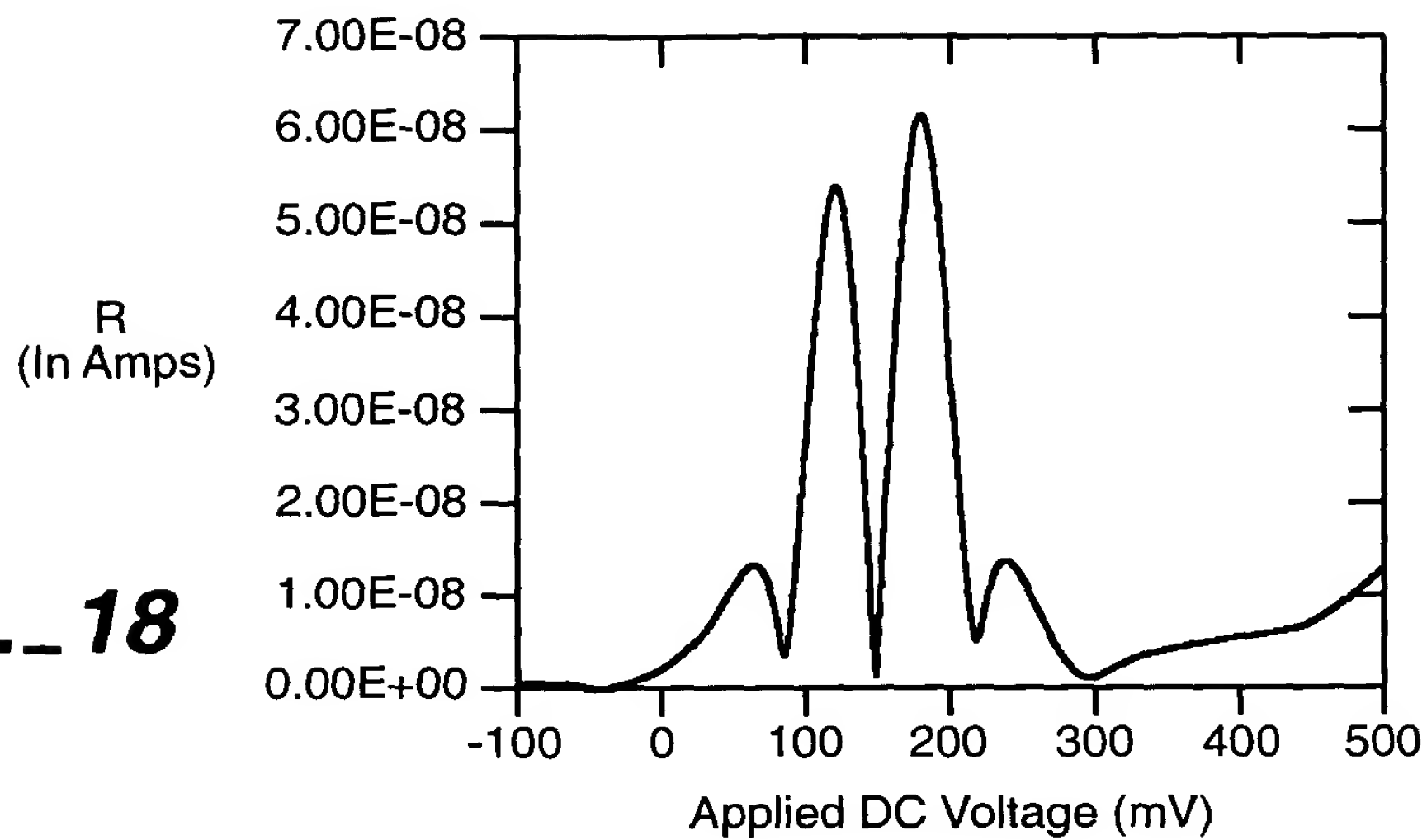
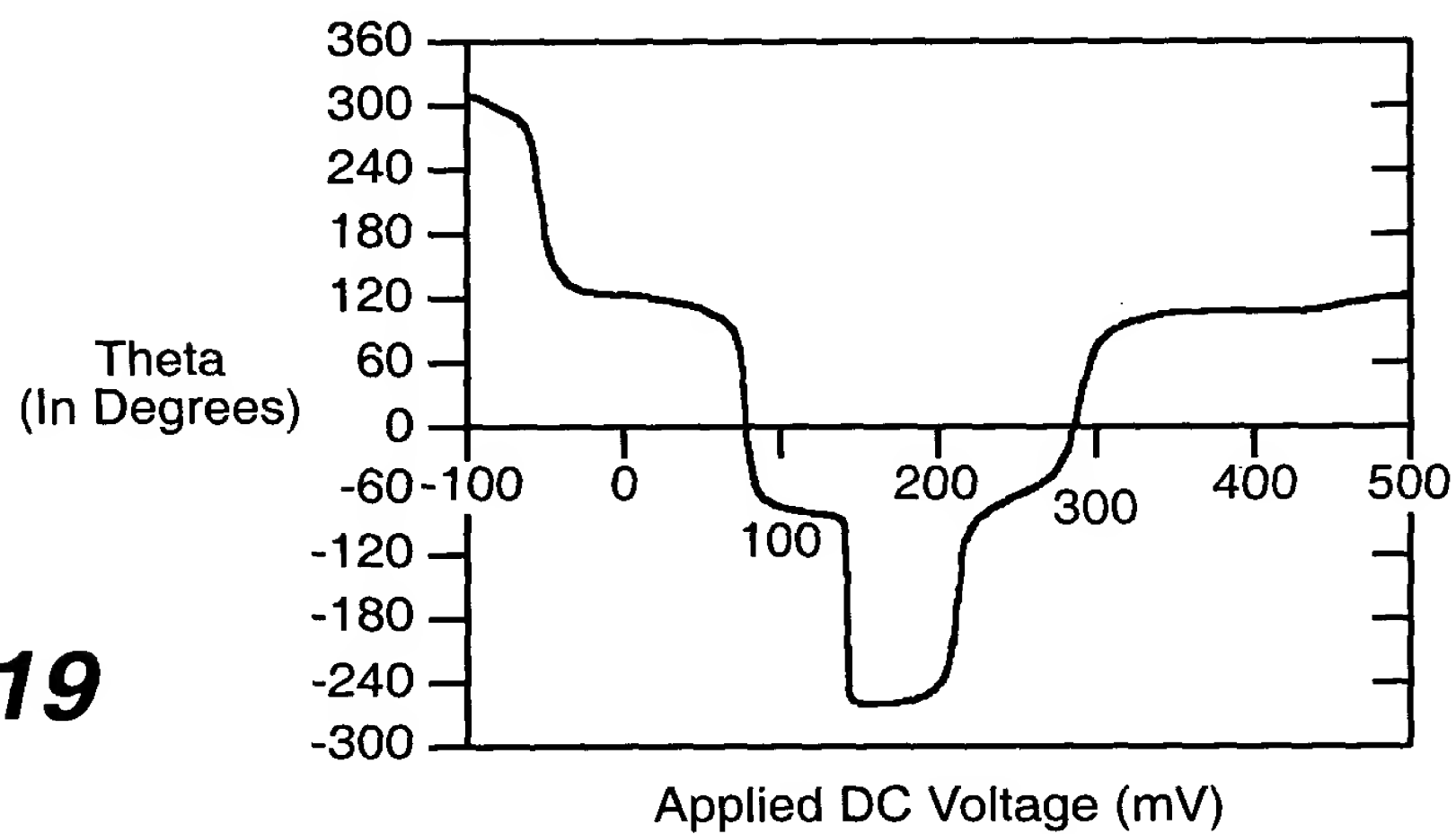
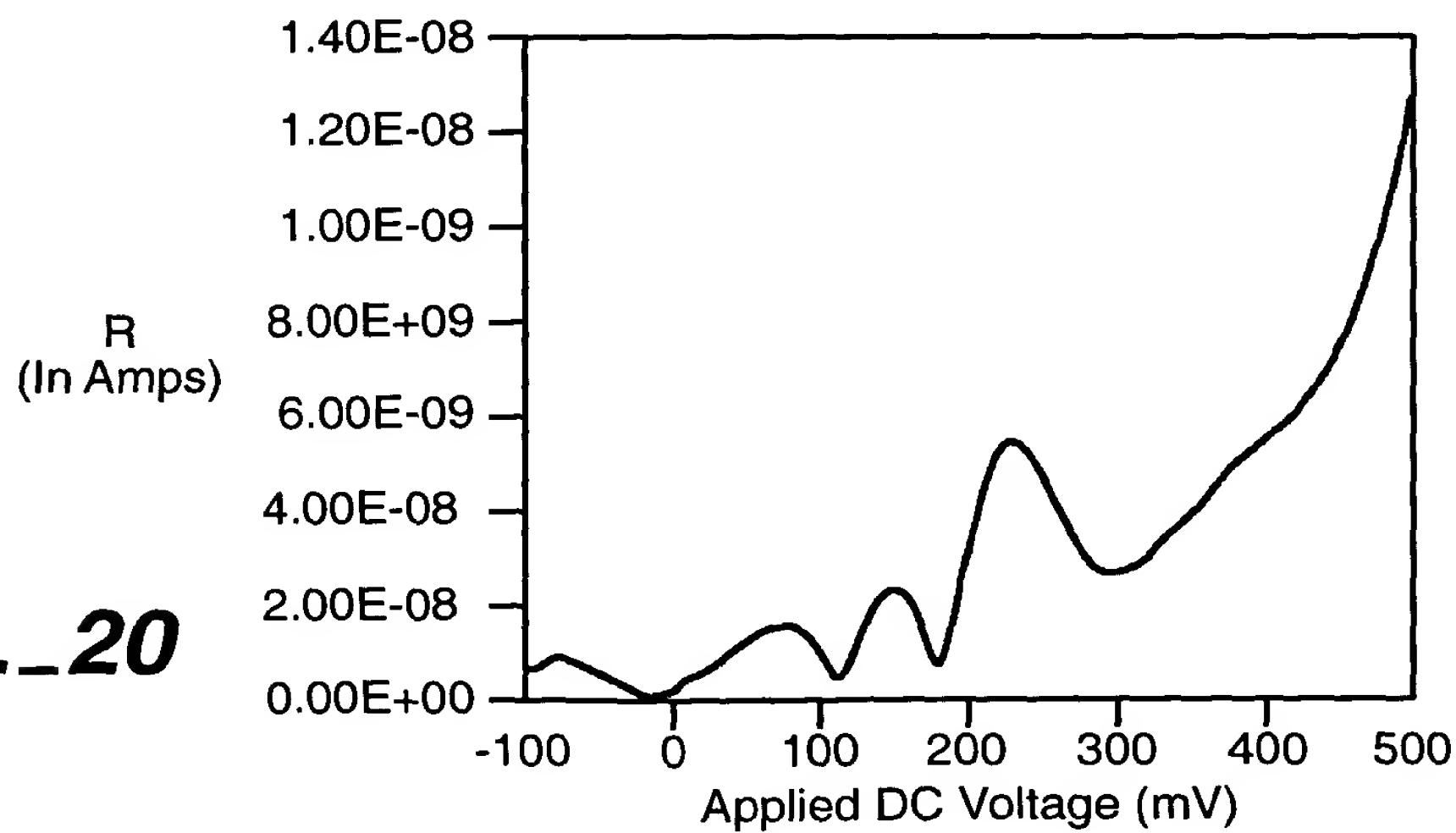
FIG. 15A

**FIG. 15B****FIG. 15C**

A Sine Wave And Its Corresponding Vector Notation

**FIG._16****FIG._17**

22 / 49

FIG._18**FIG._19****FIG._20**

23 / 49

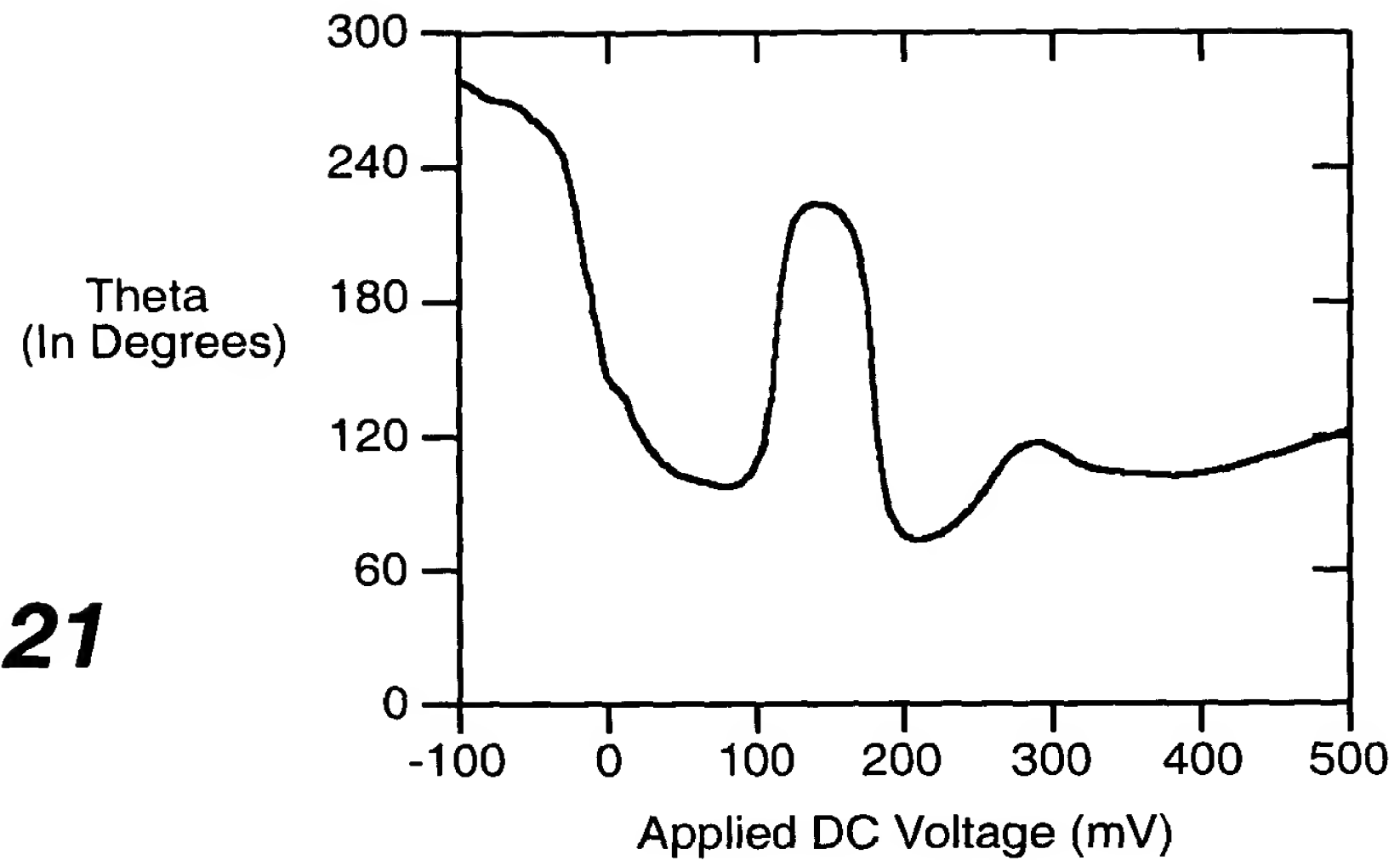
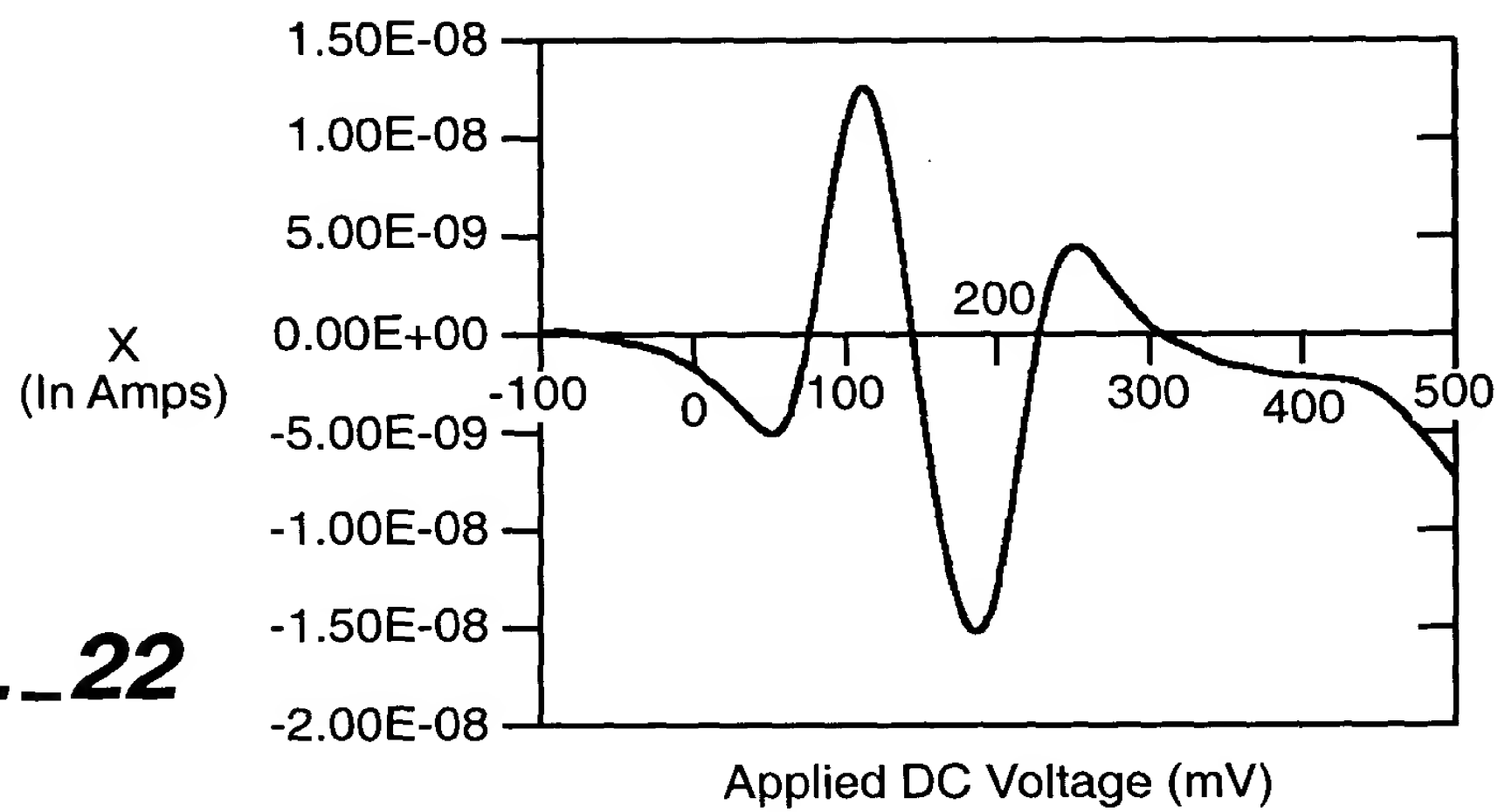
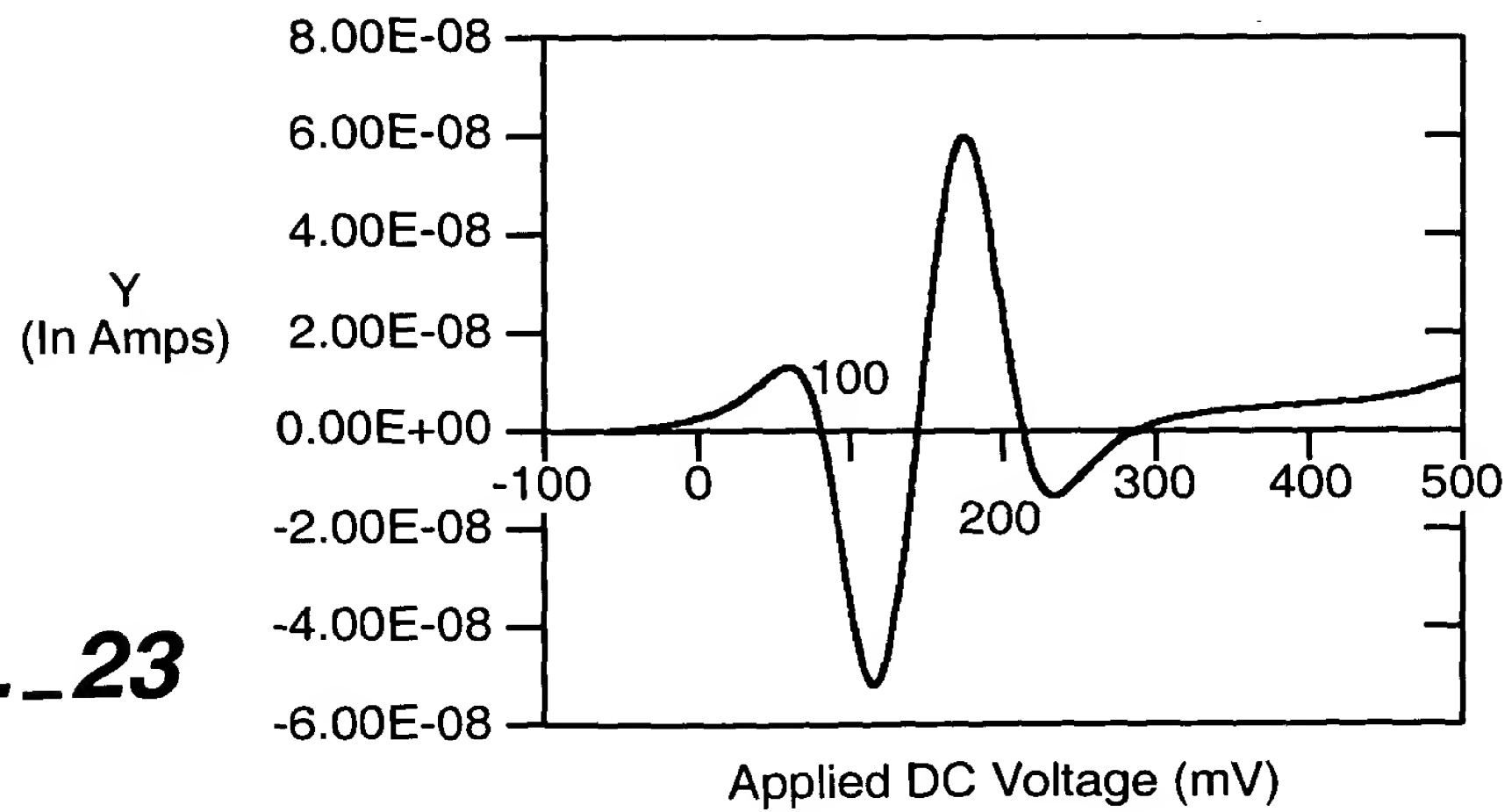
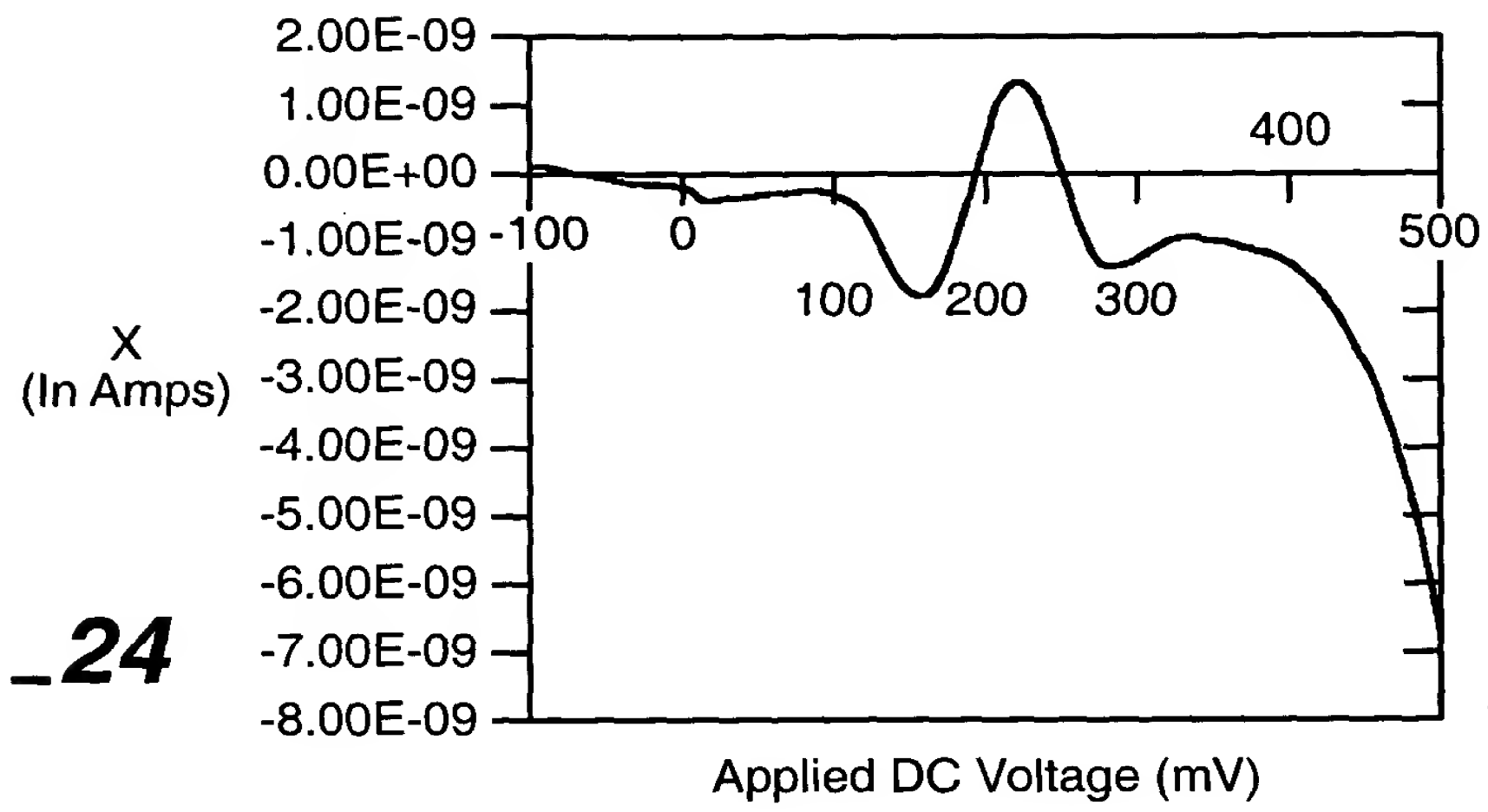
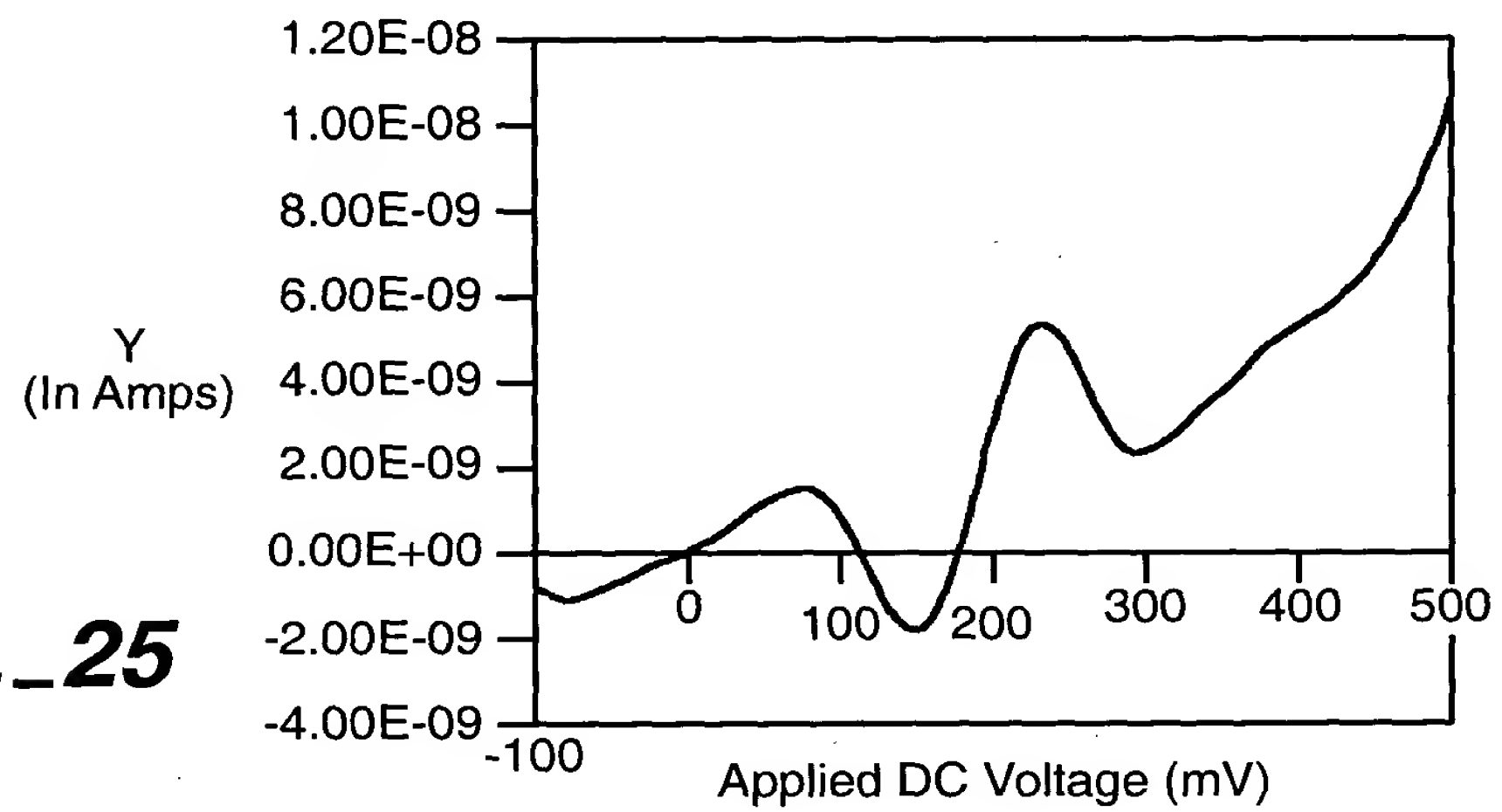
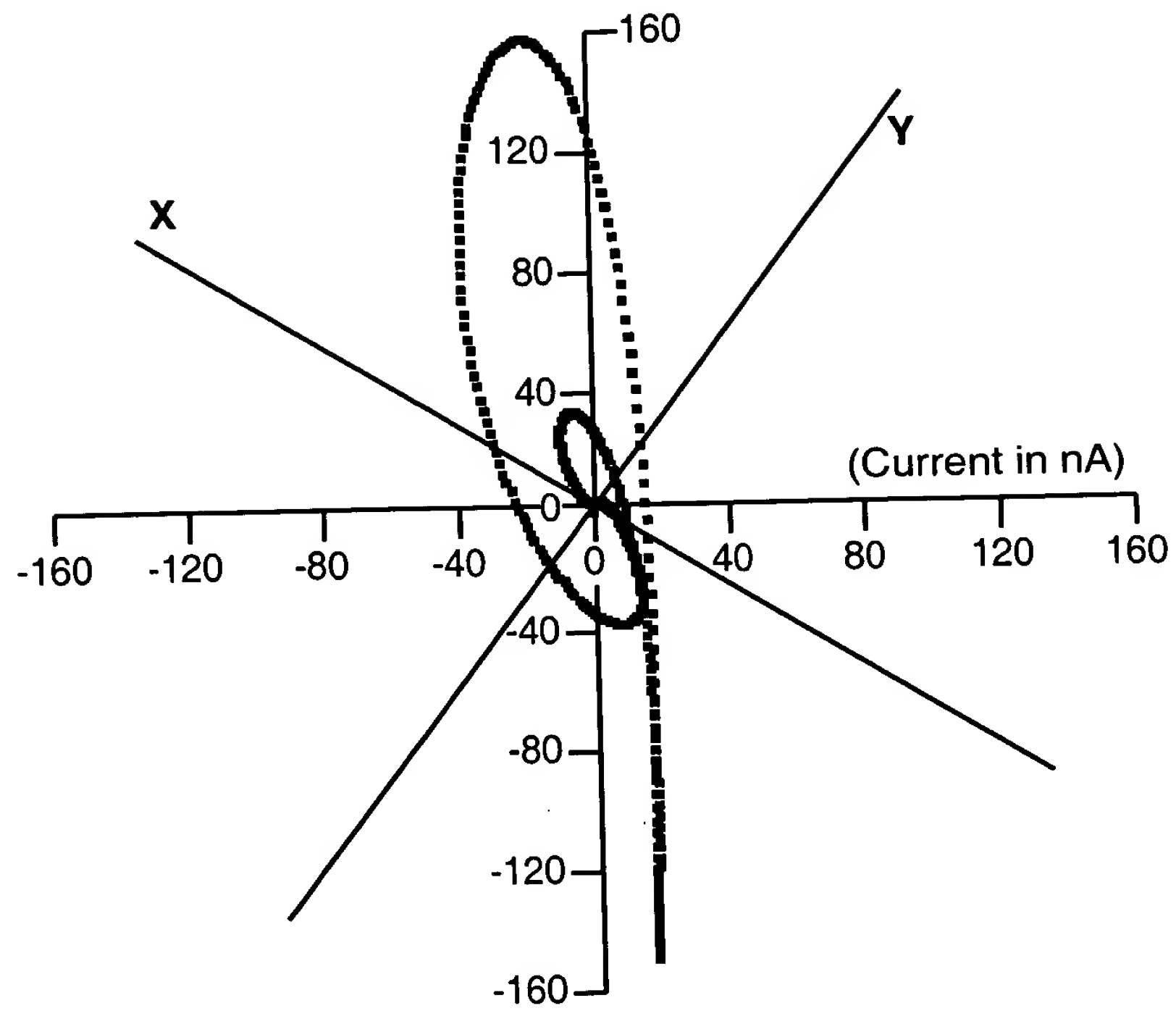
FIG._21**FIG._22****FIG._23**

FIG._24**FIG._25**

**FIG. 26**

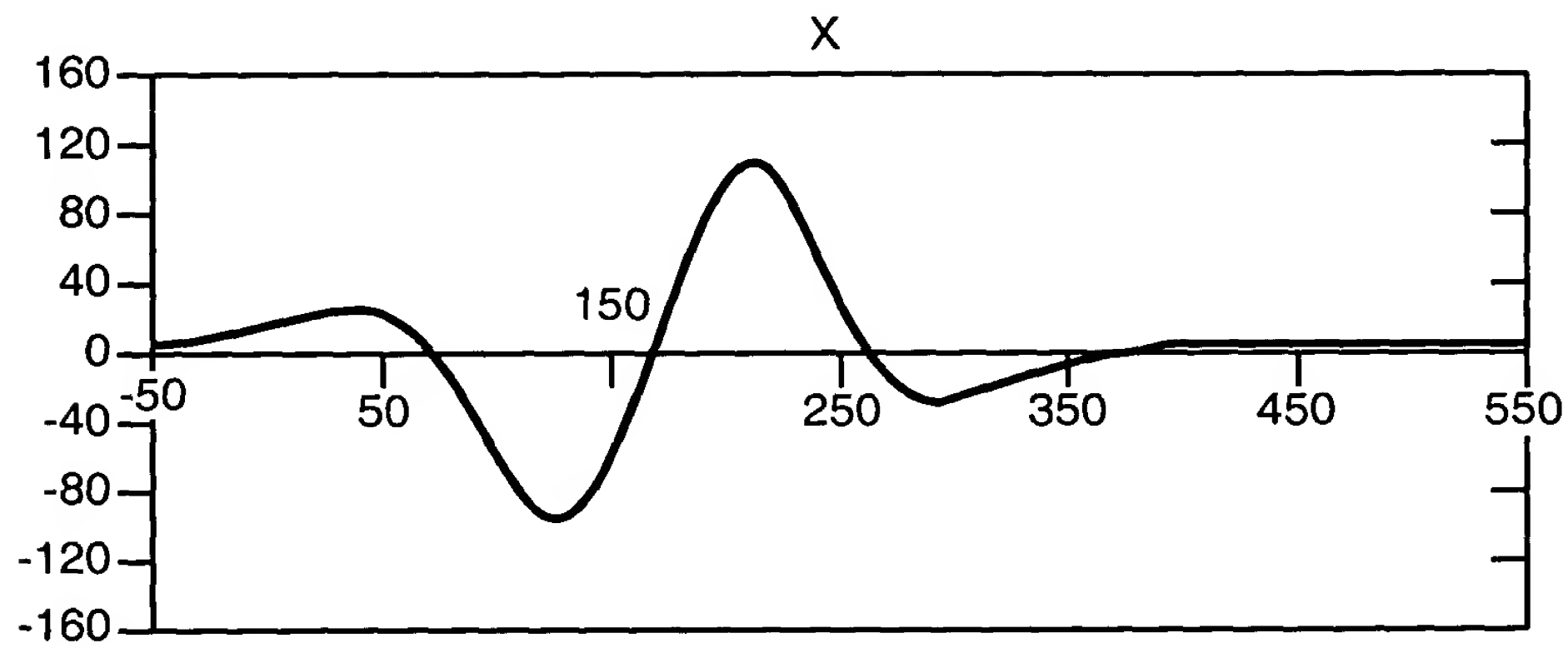


FIG. 27

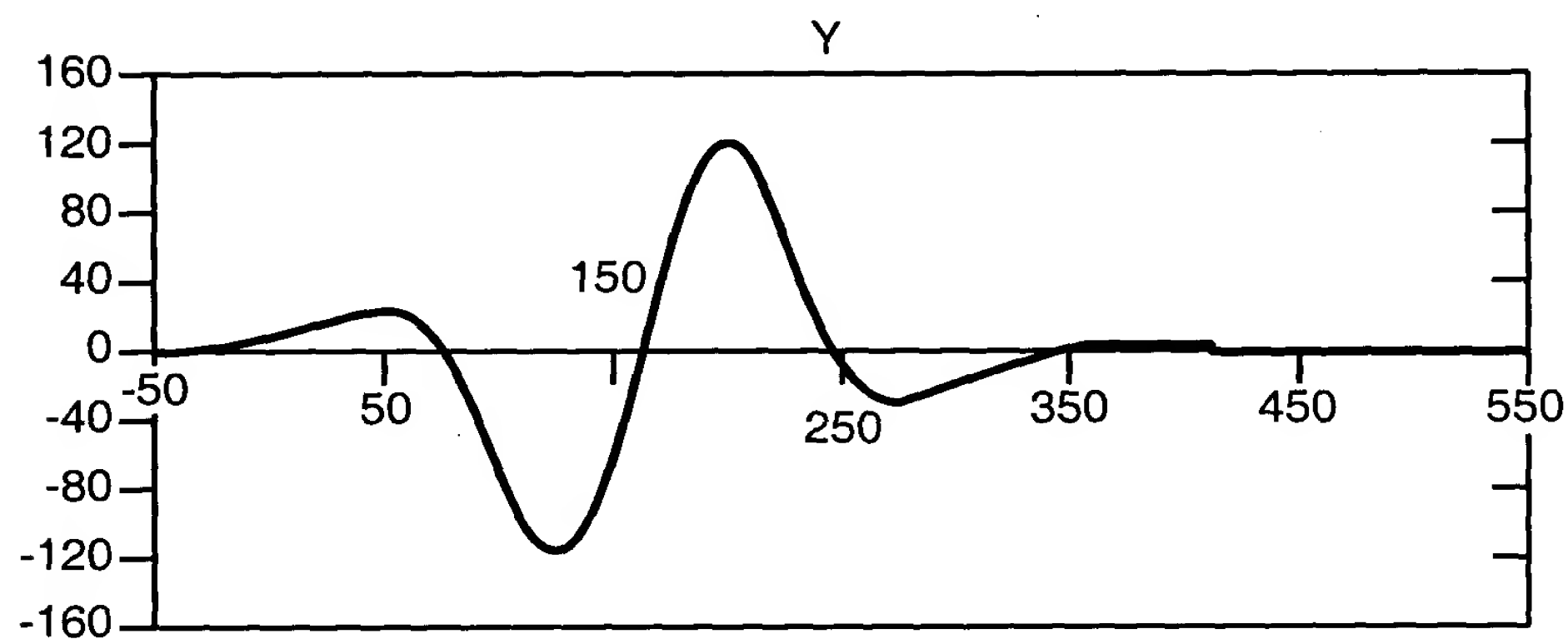


FIG. 28

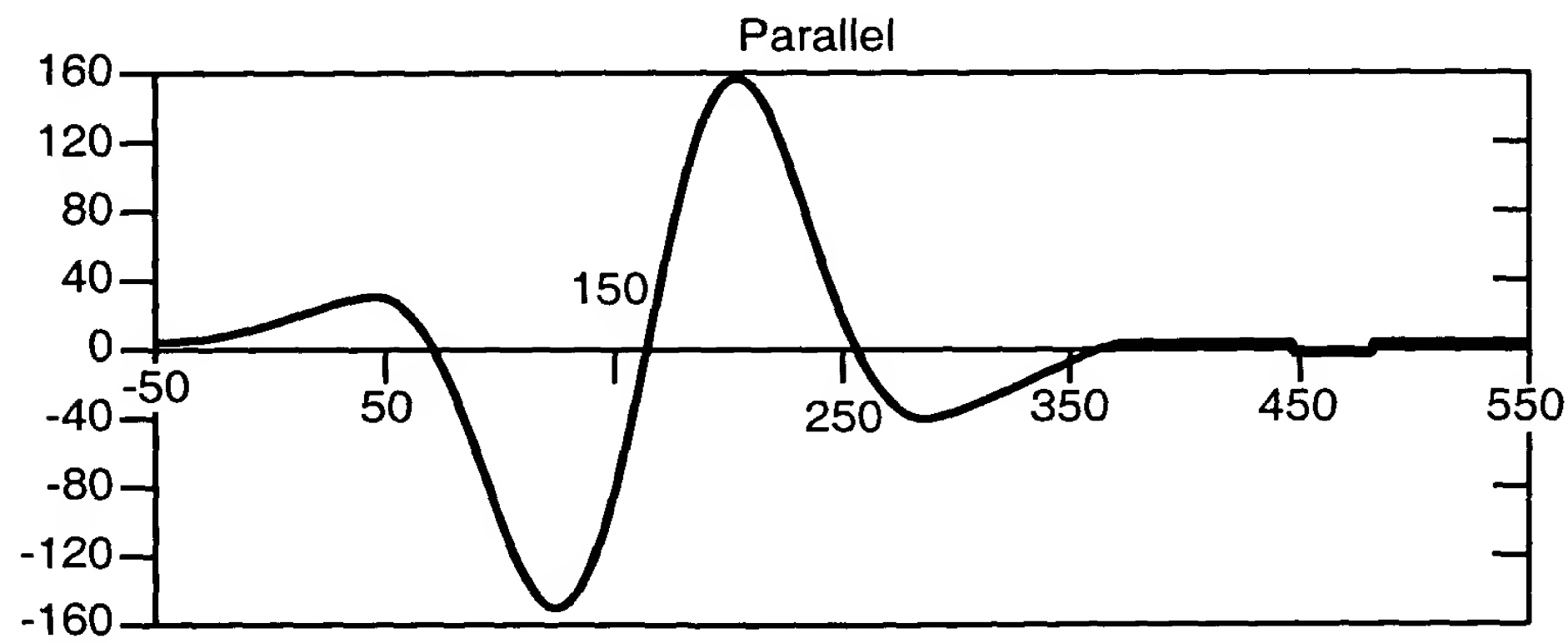
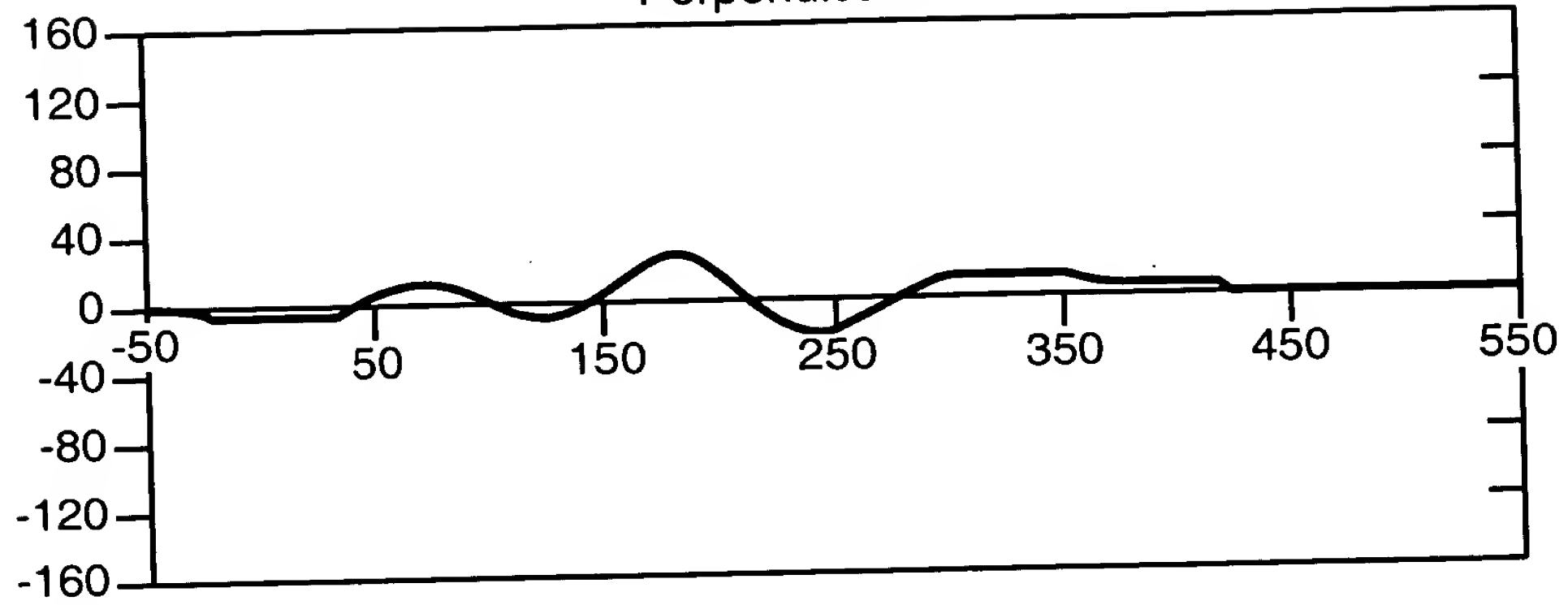
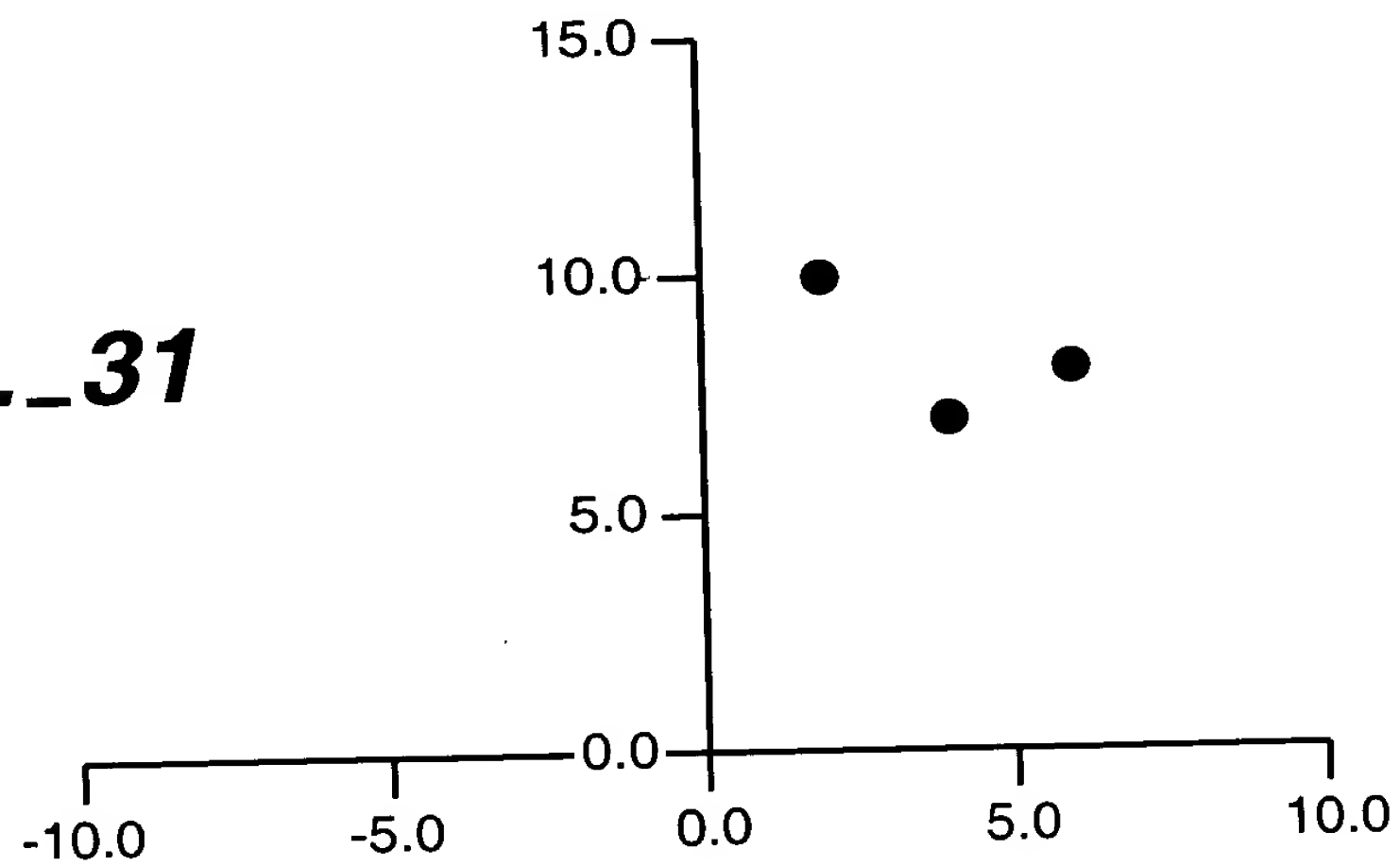
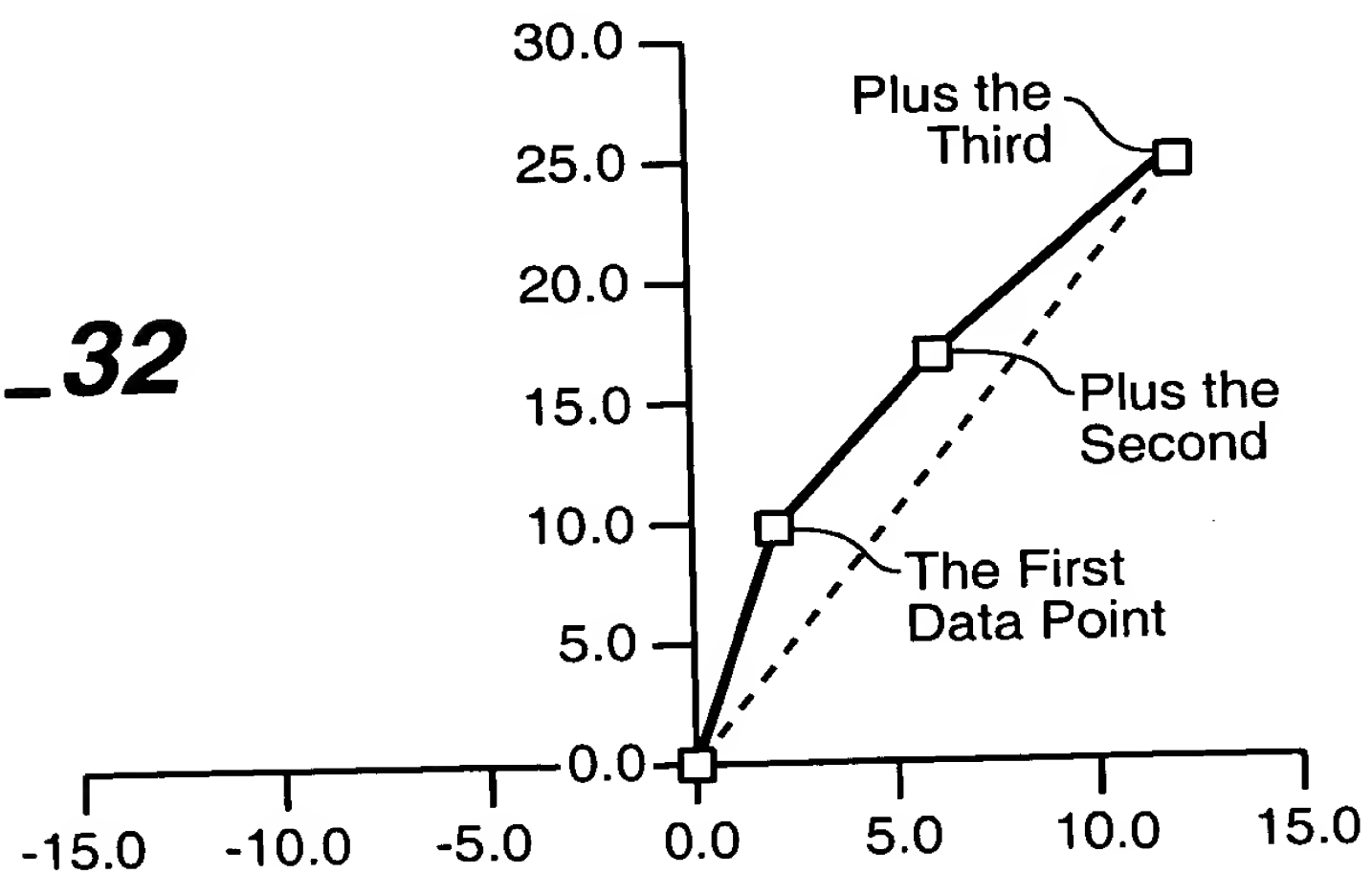


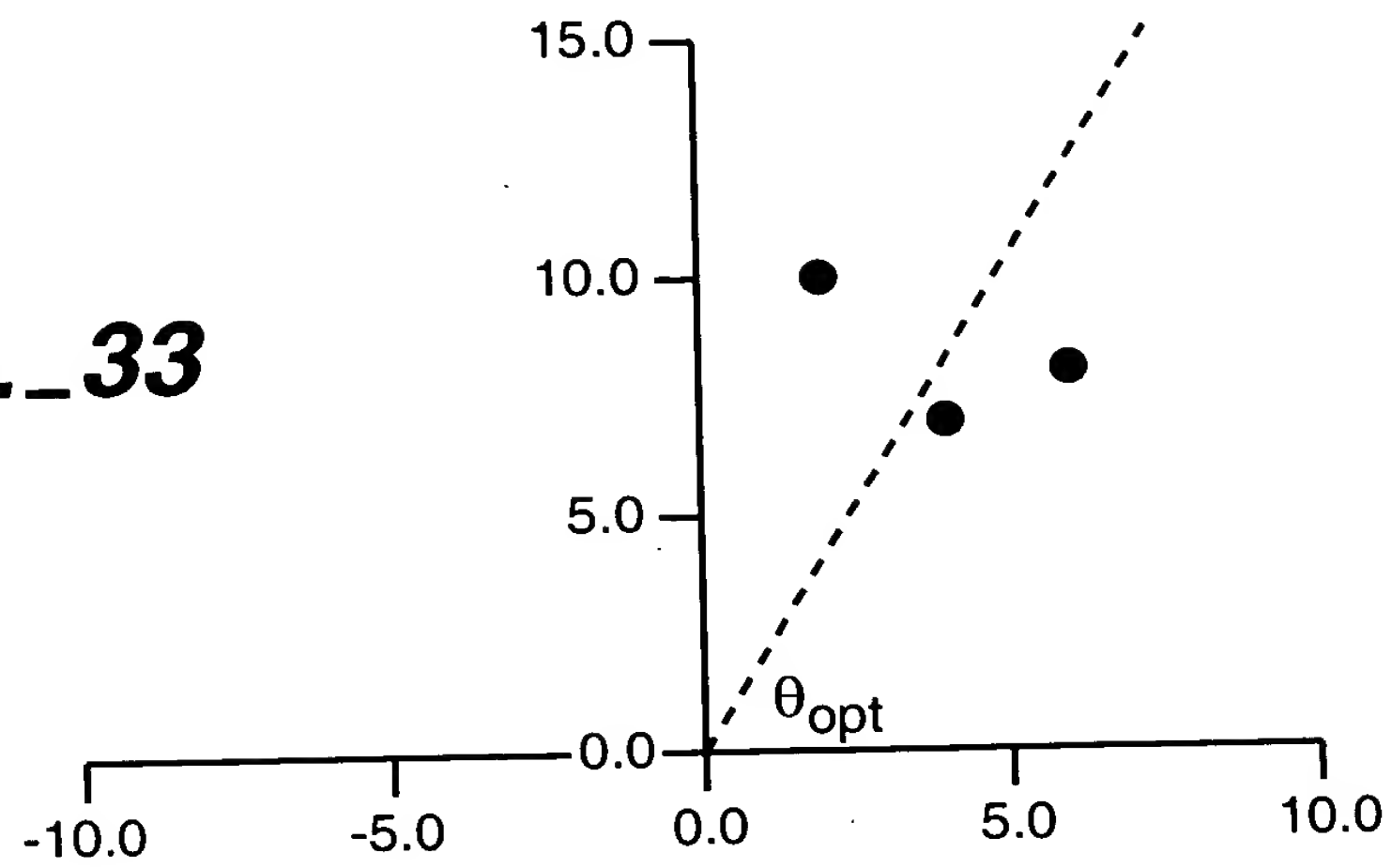
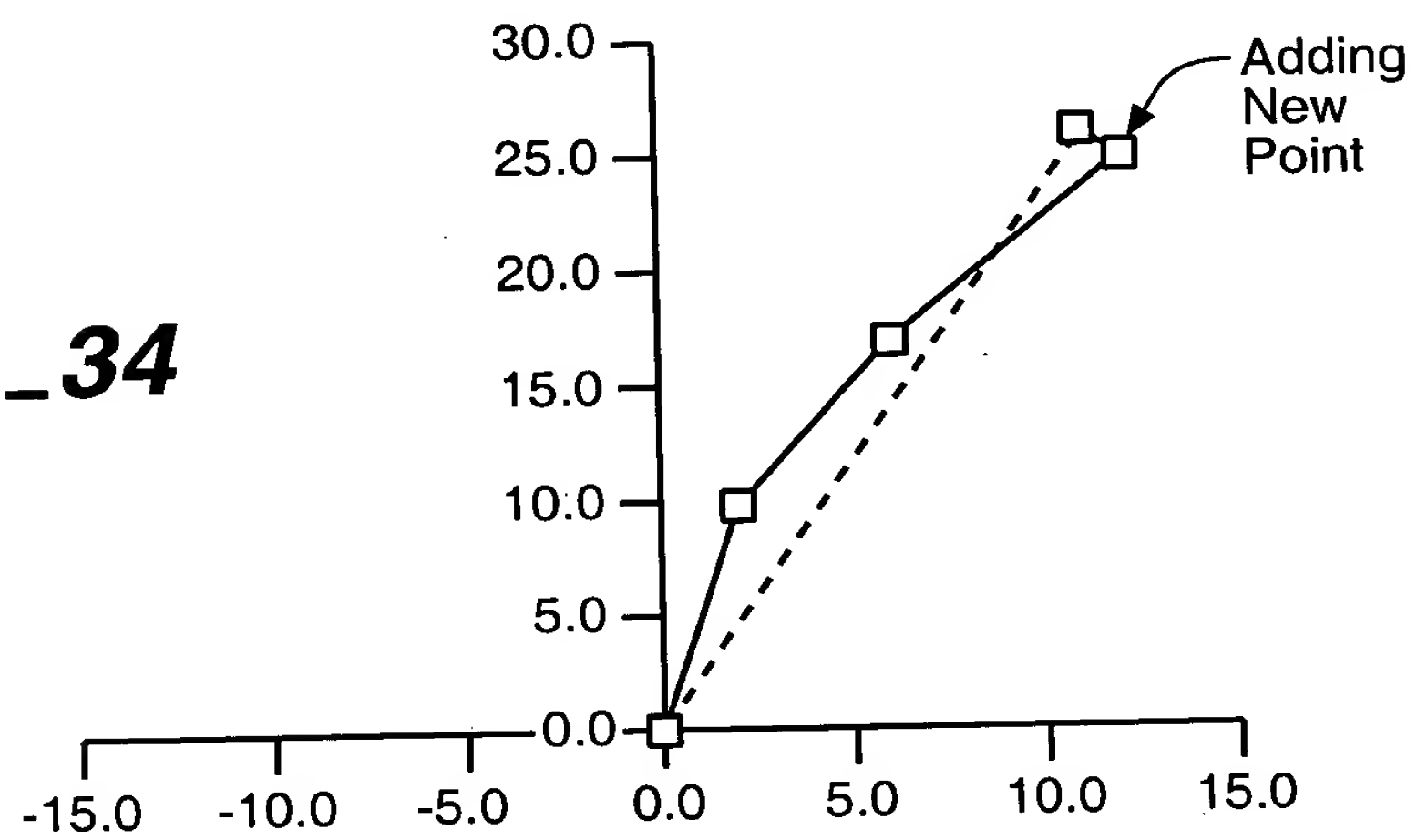
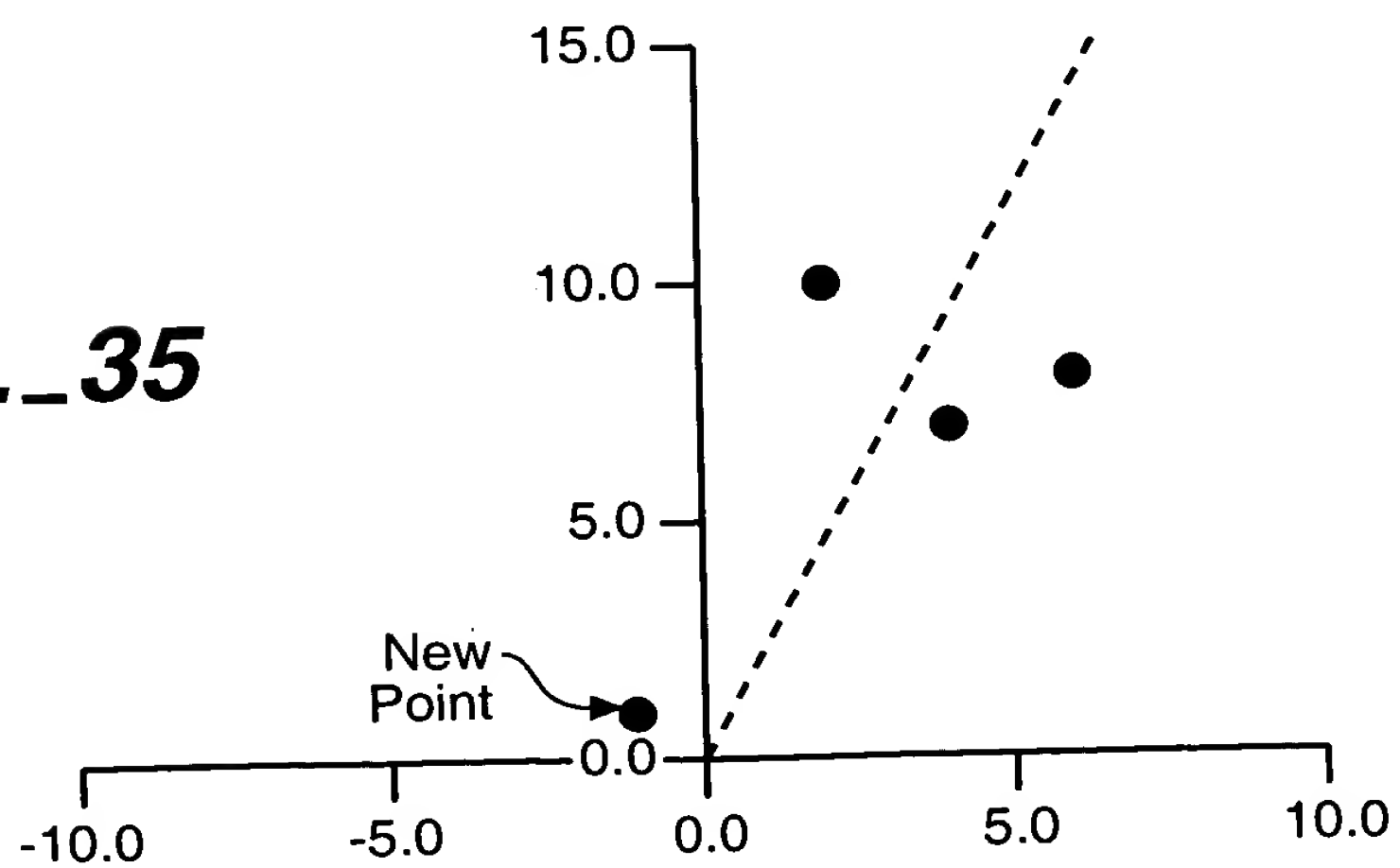
FIG. 29

27 / 49

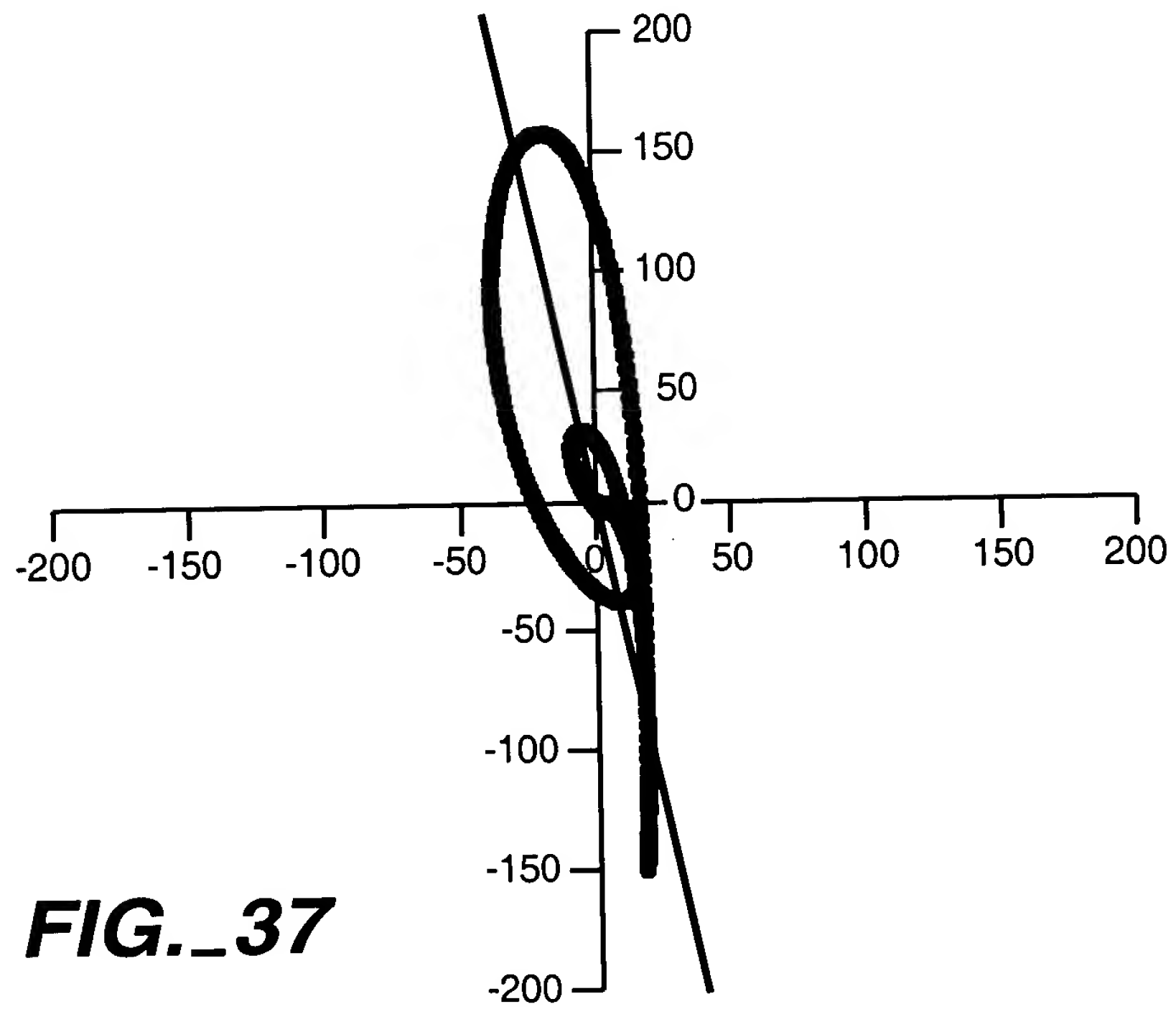
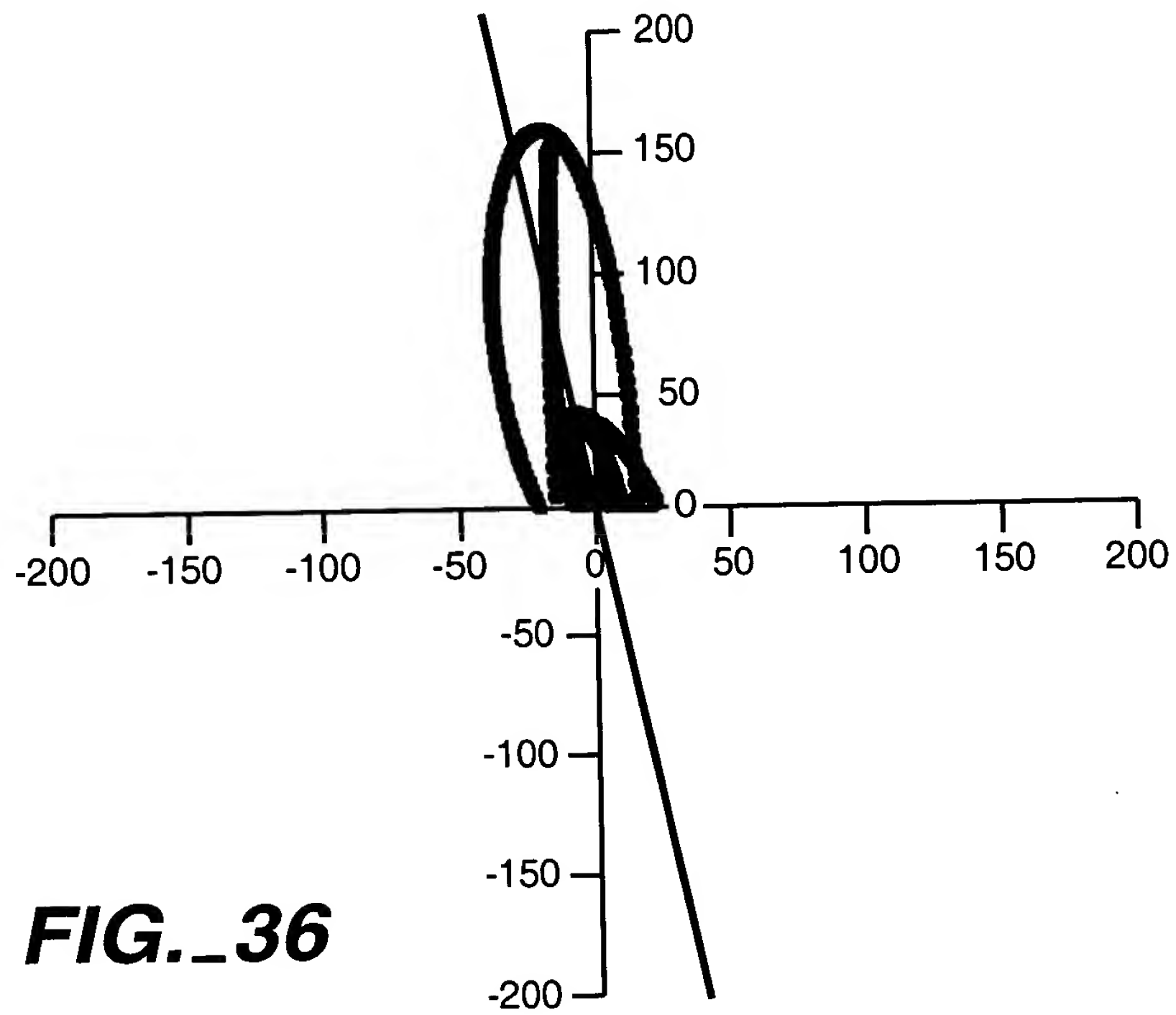
Perpendicular

**FIG._30****FIG._31****FIG._32**

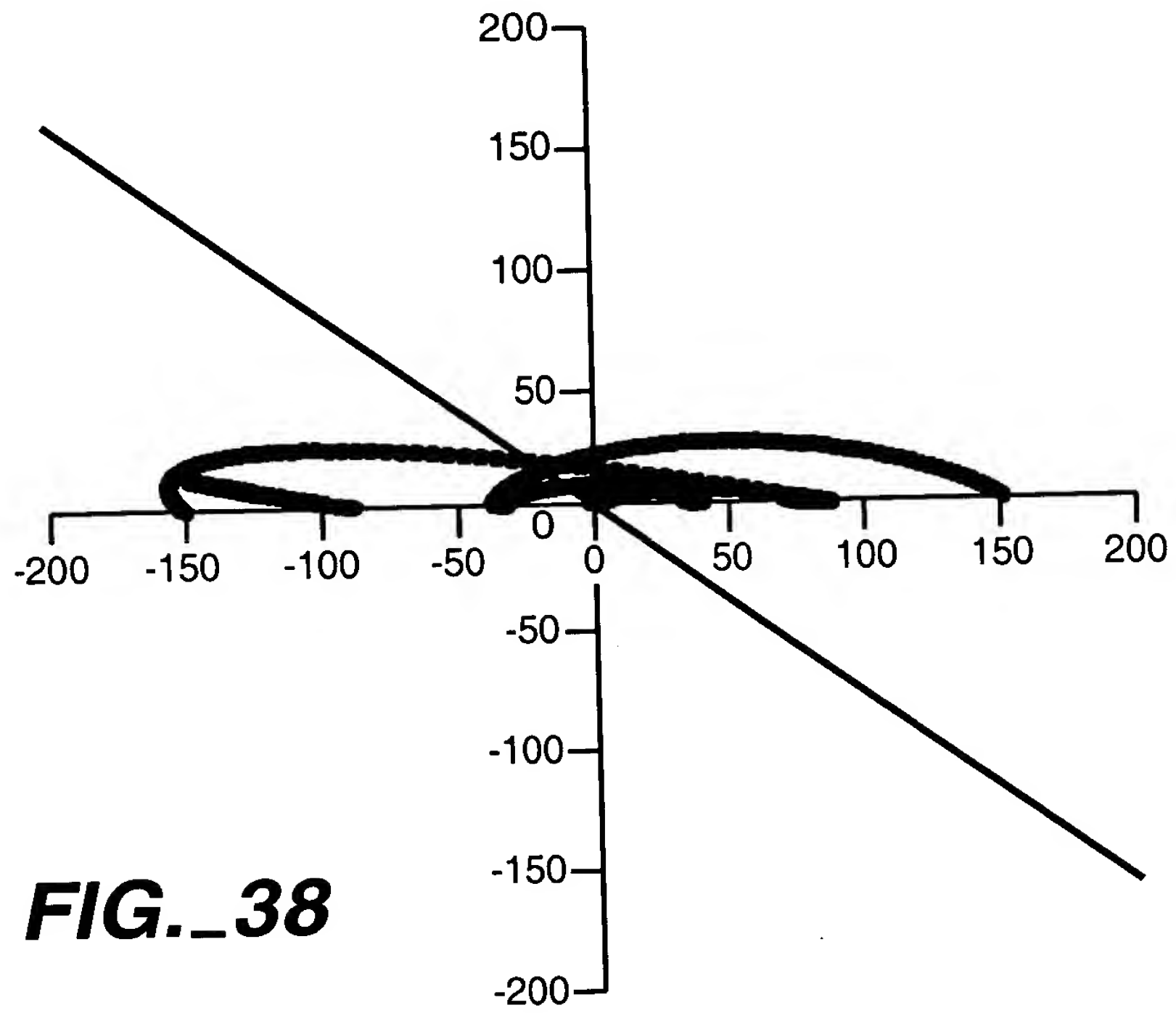
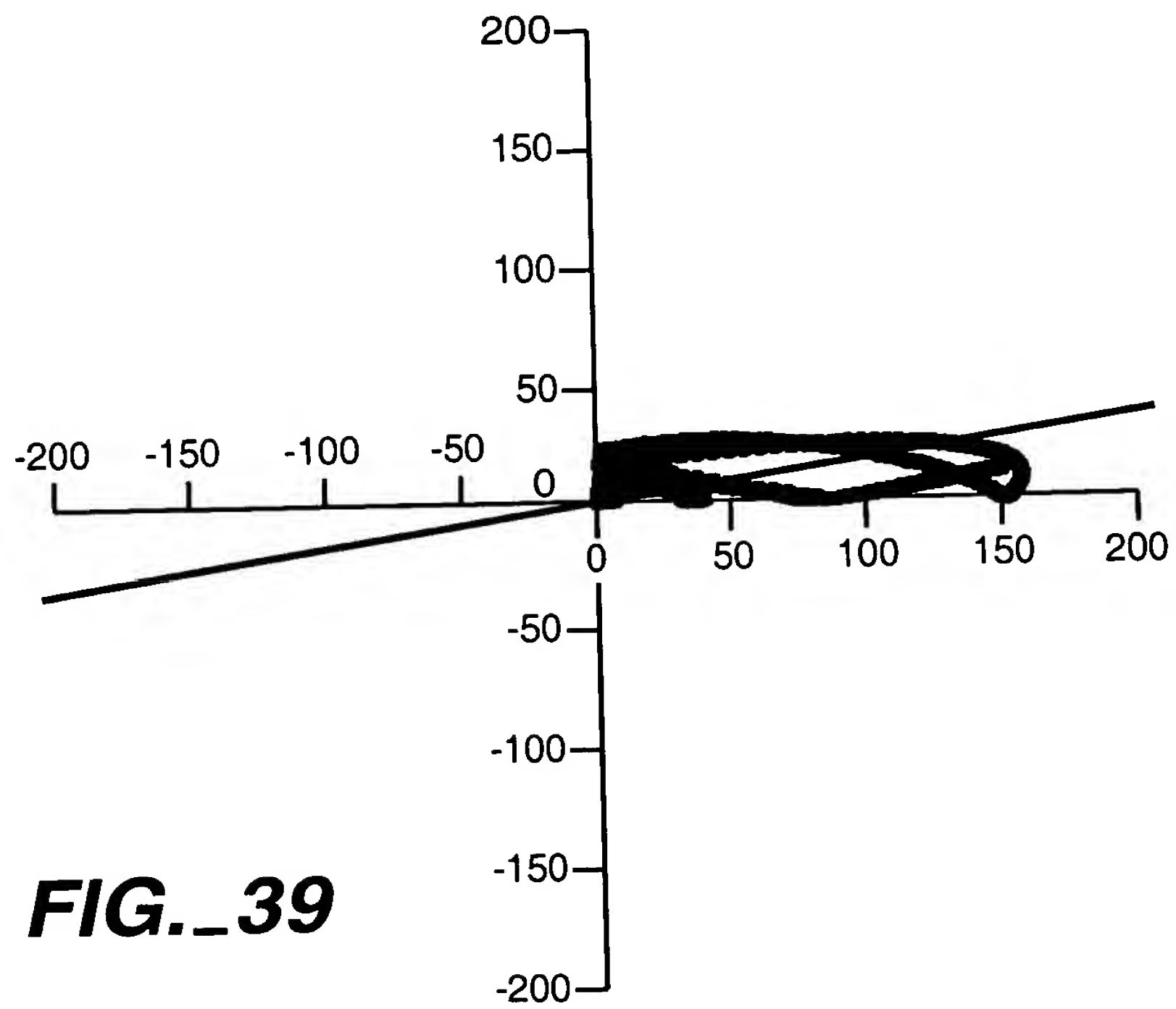
28 / 49

FIG._33**FIG._34****FIG._35**

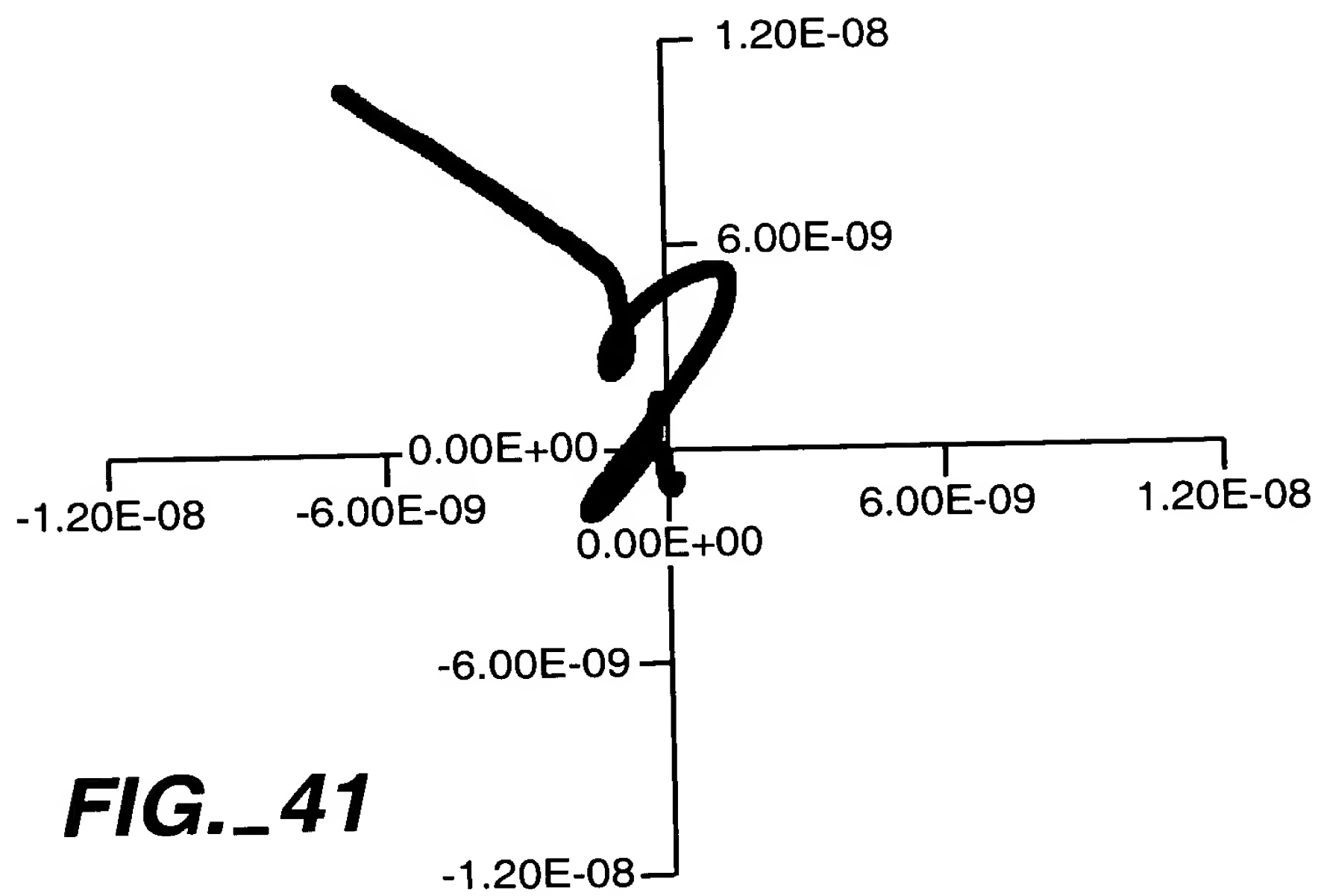
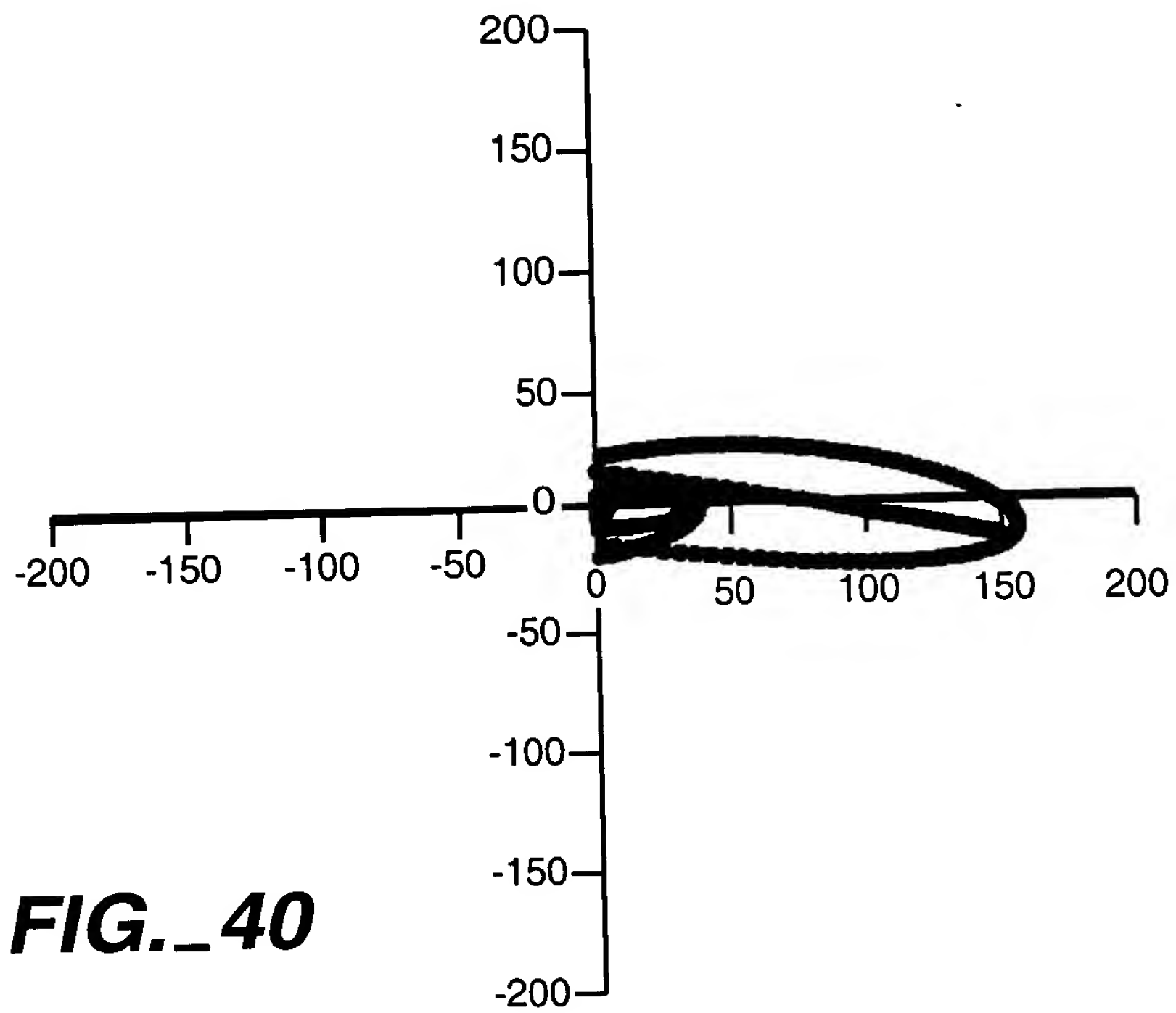
29 / 49



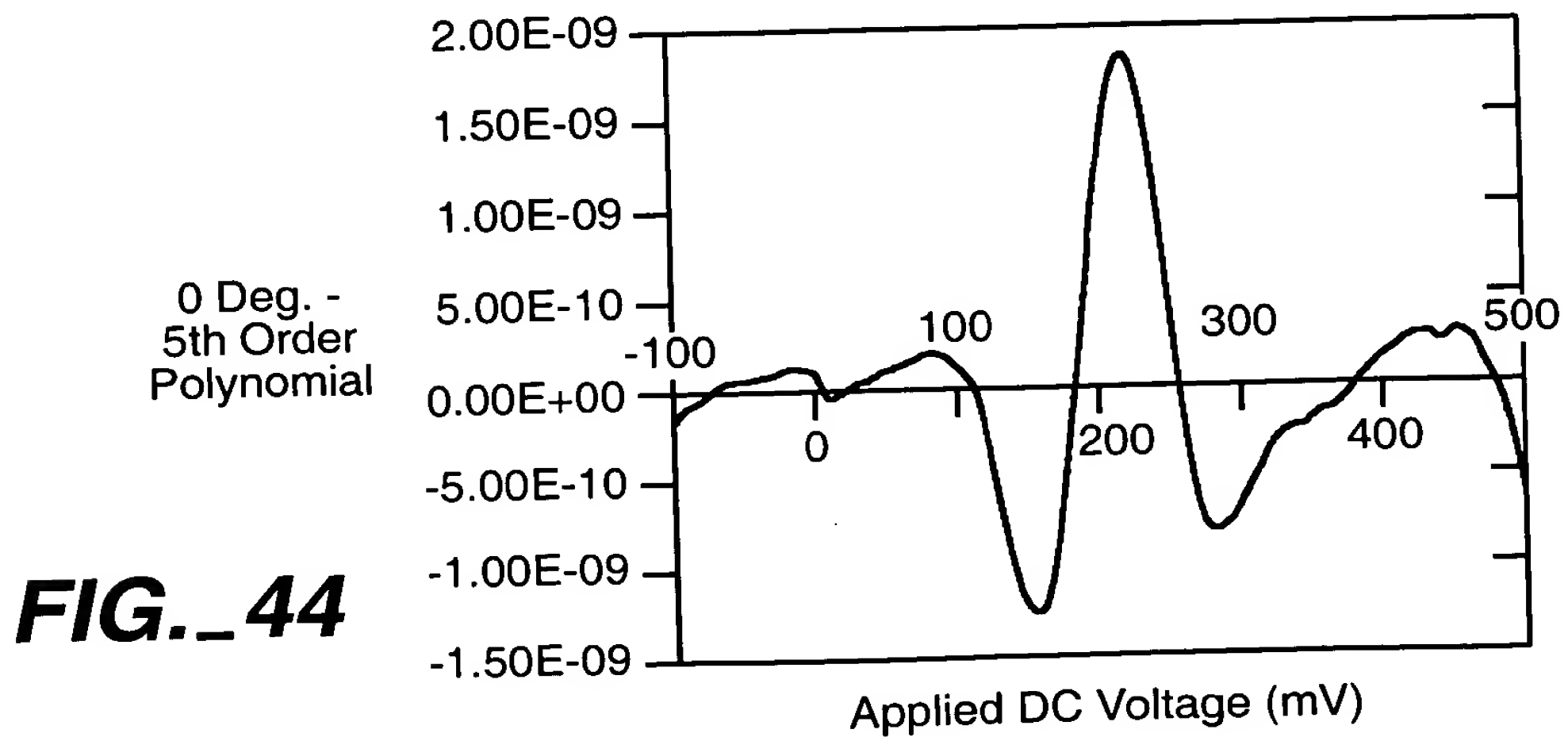
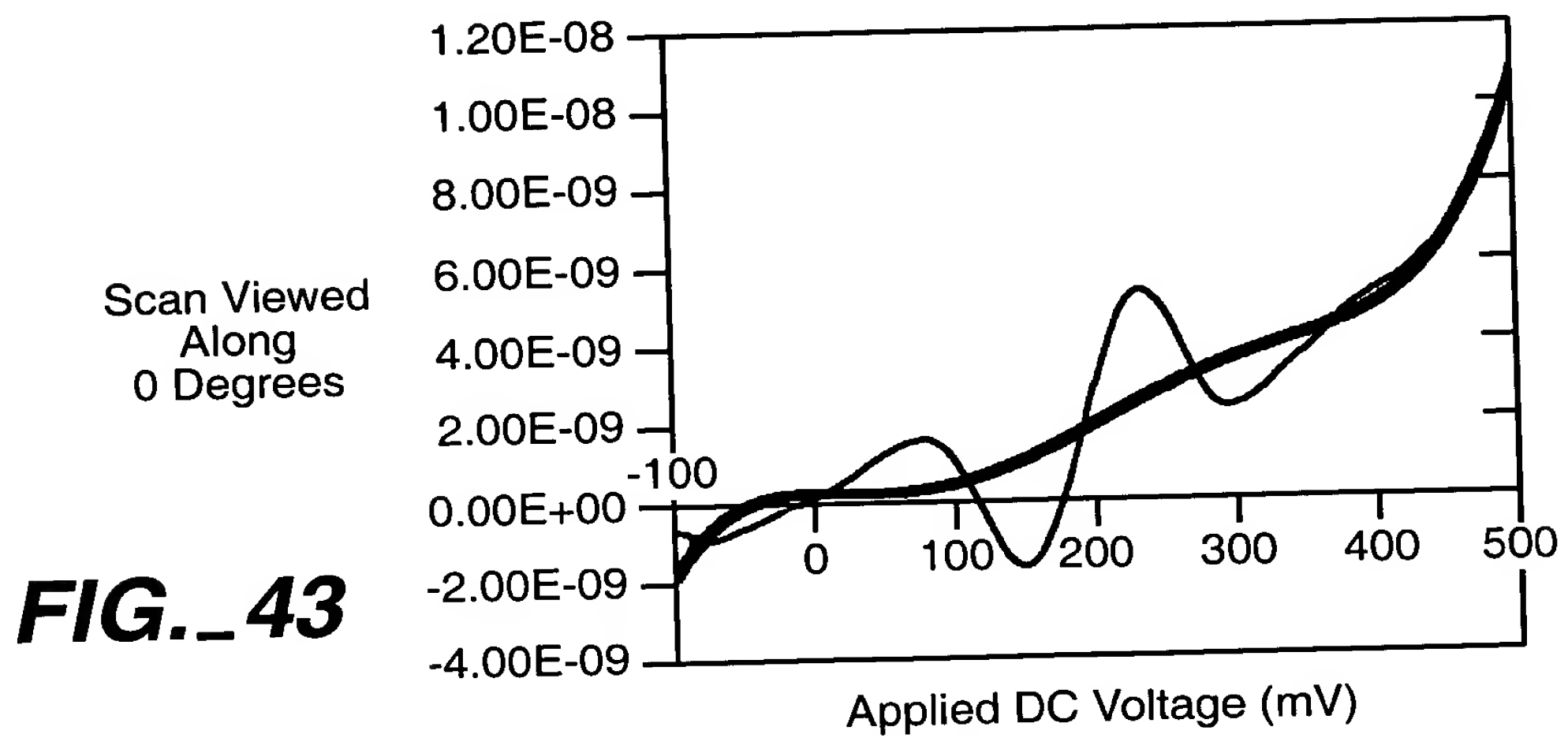
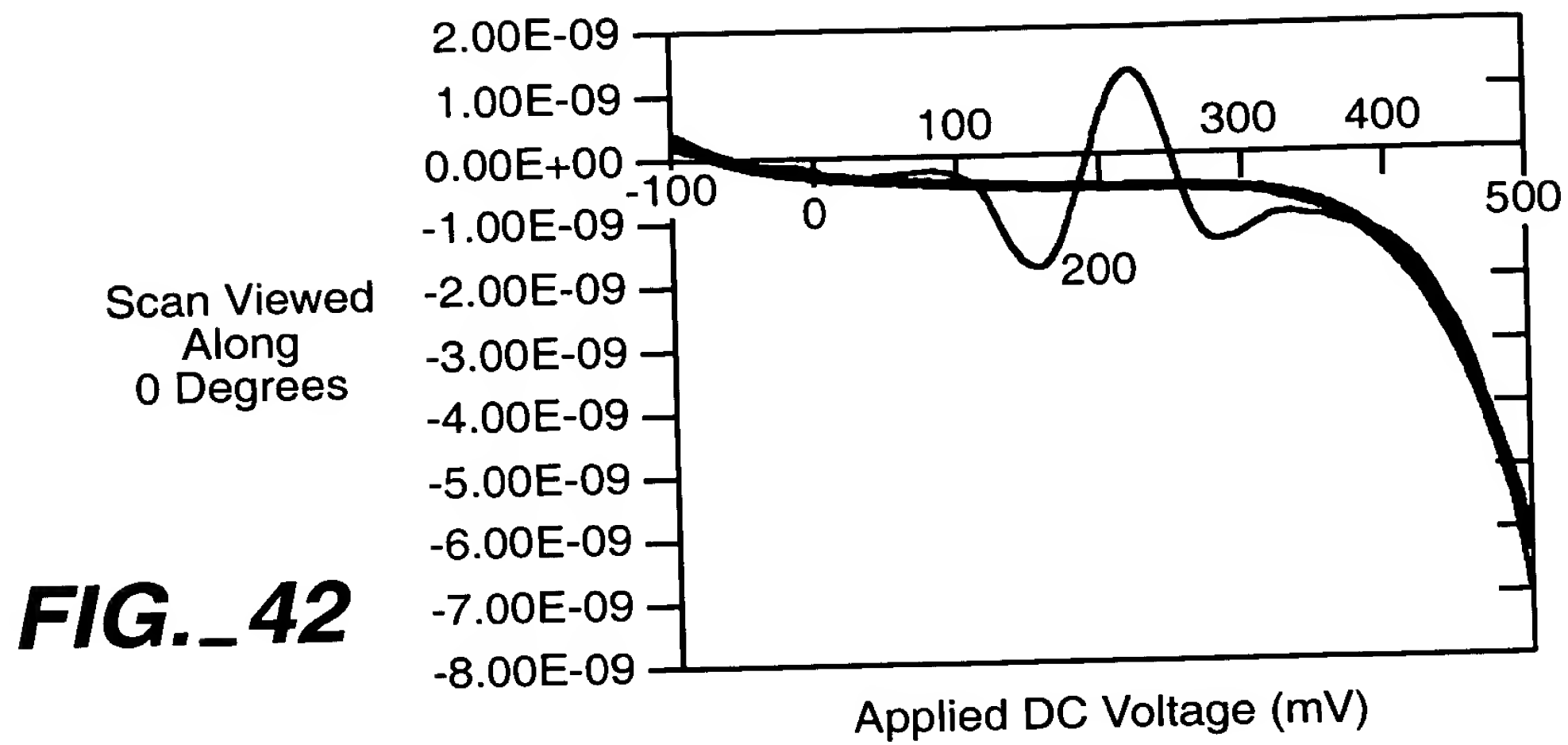
30 / 49

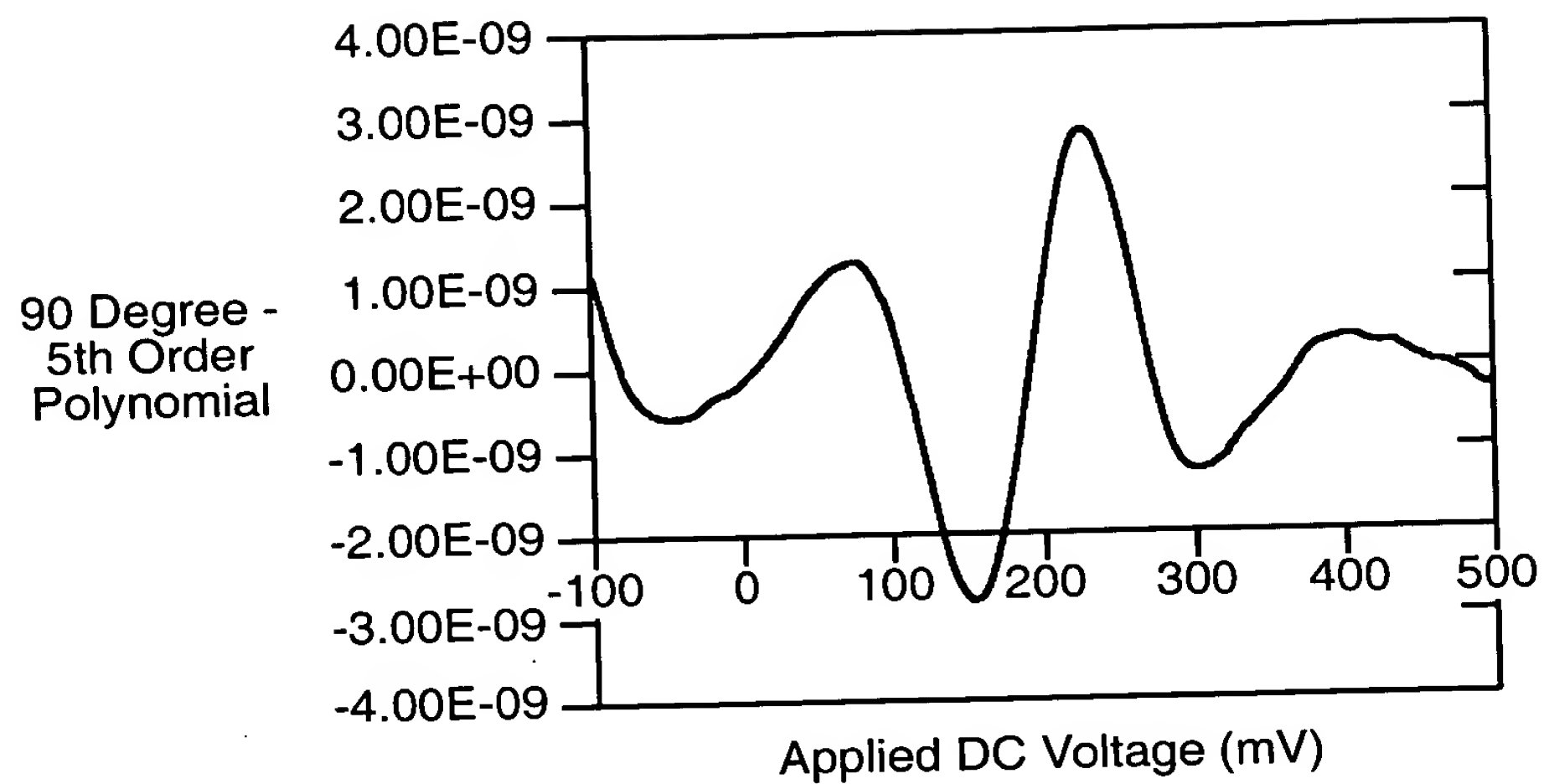
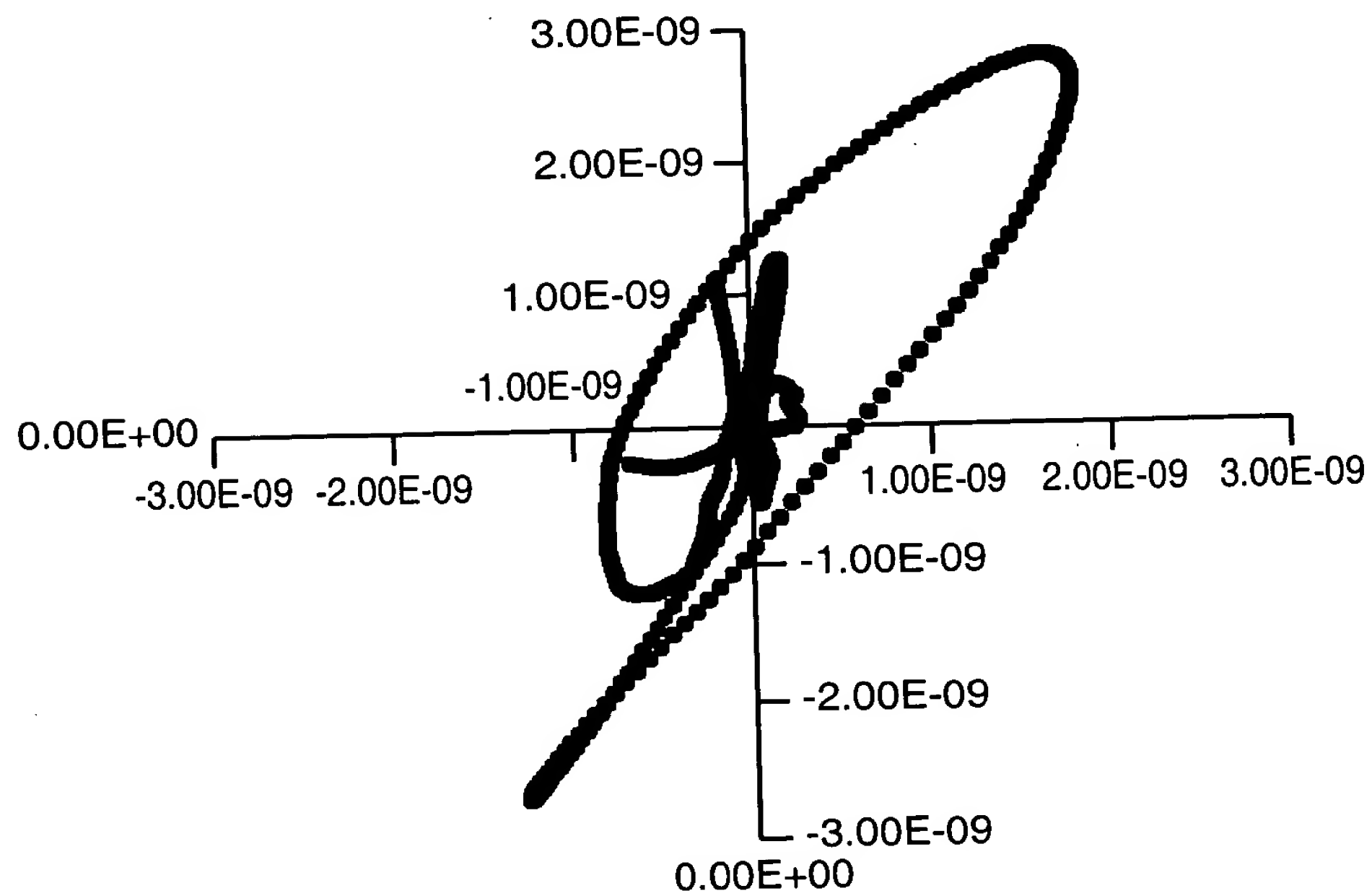
**FIG. 38****FIG. 39**

31 / 49



32 / 49



**FIG._45****FIG._46**

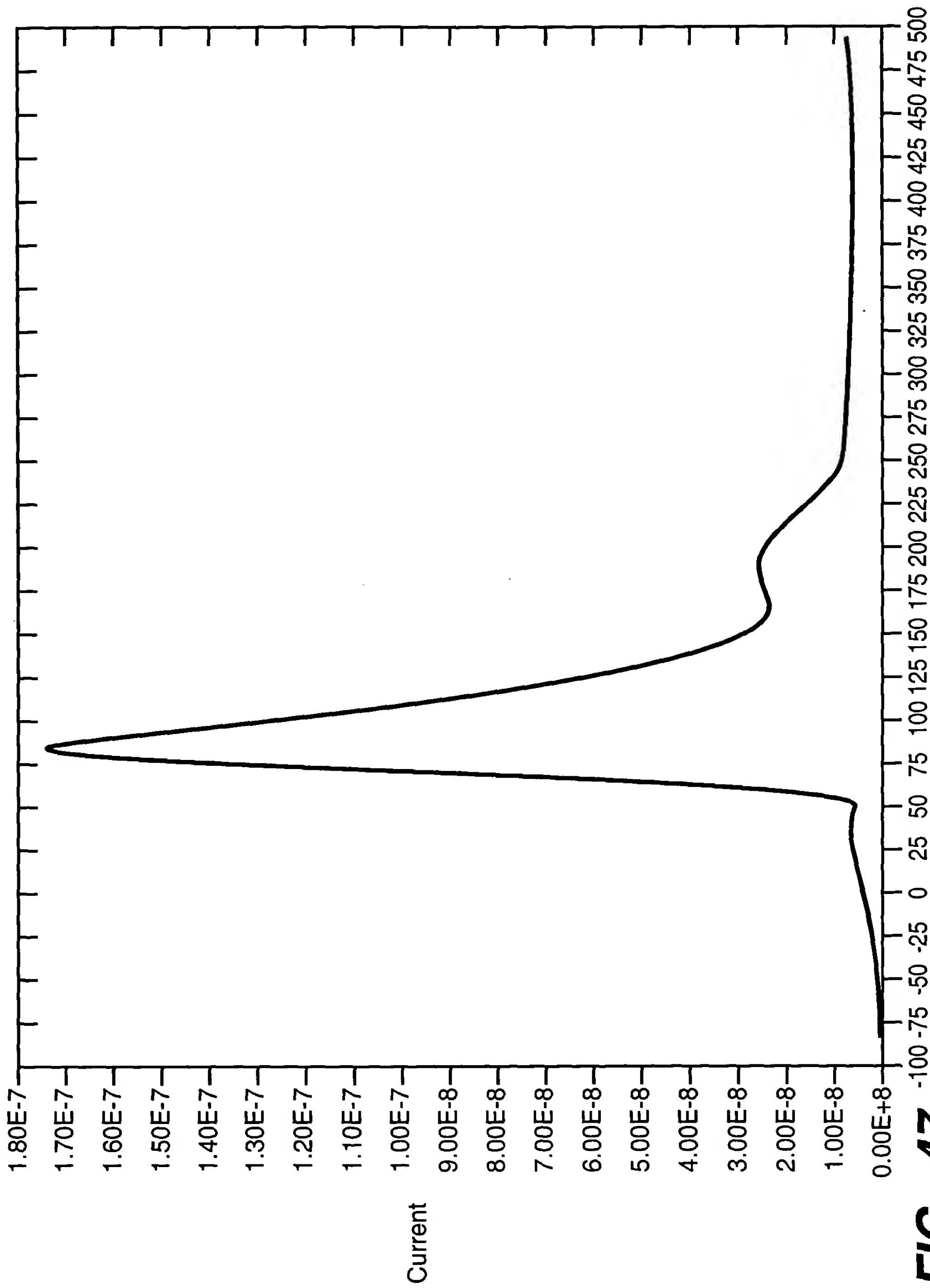


FIG._47

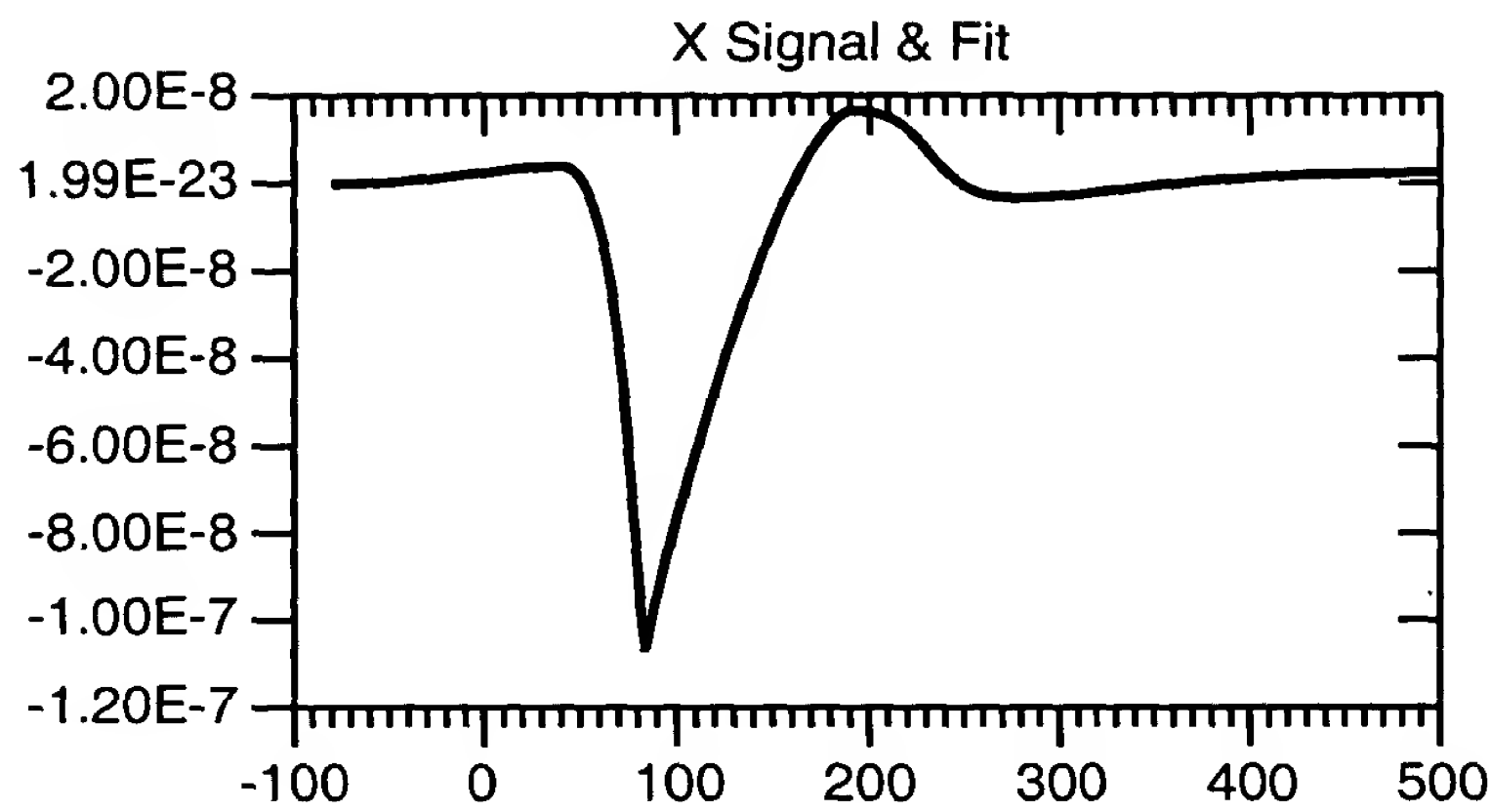


FIG._48

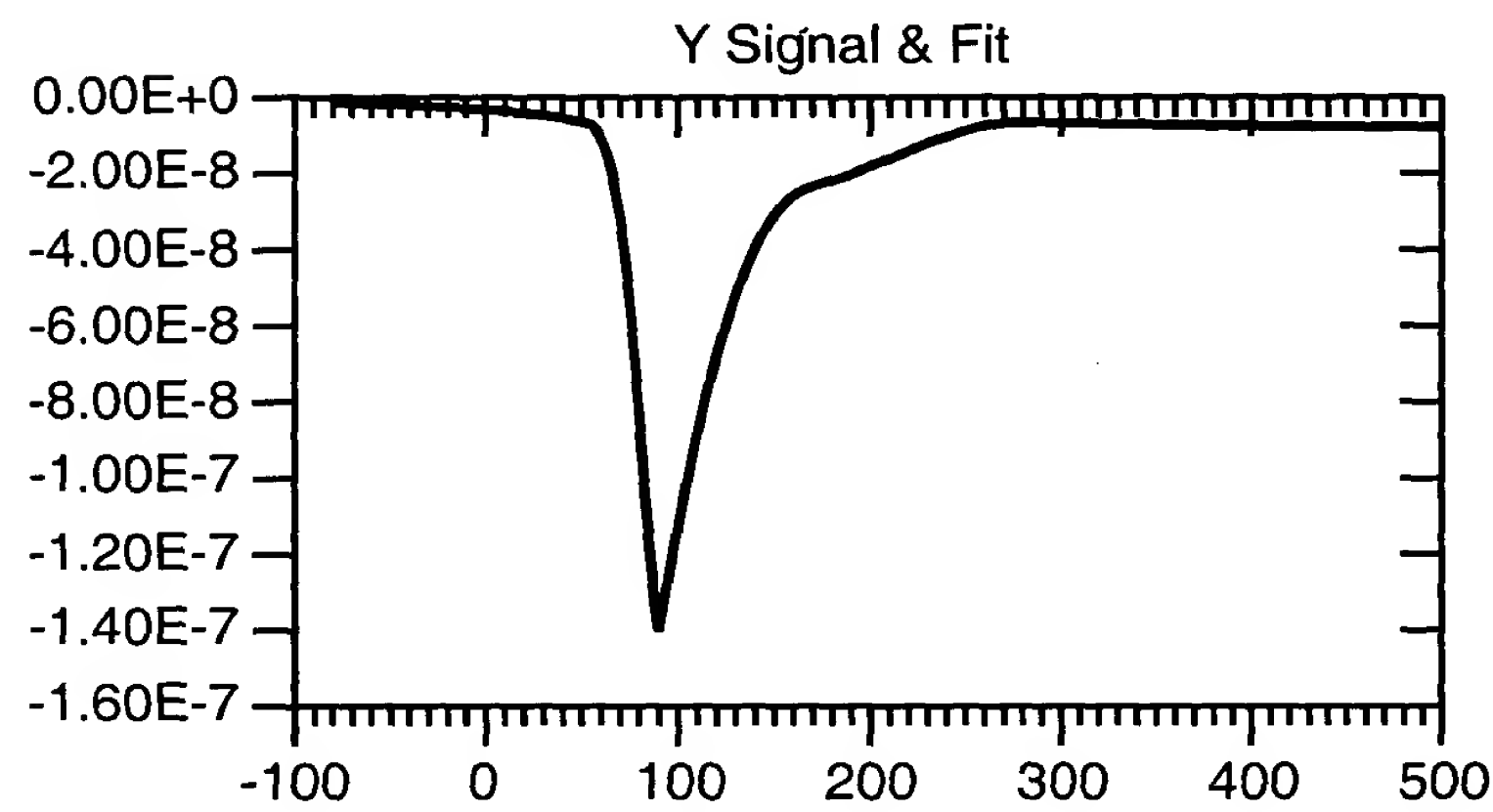


FIG._49

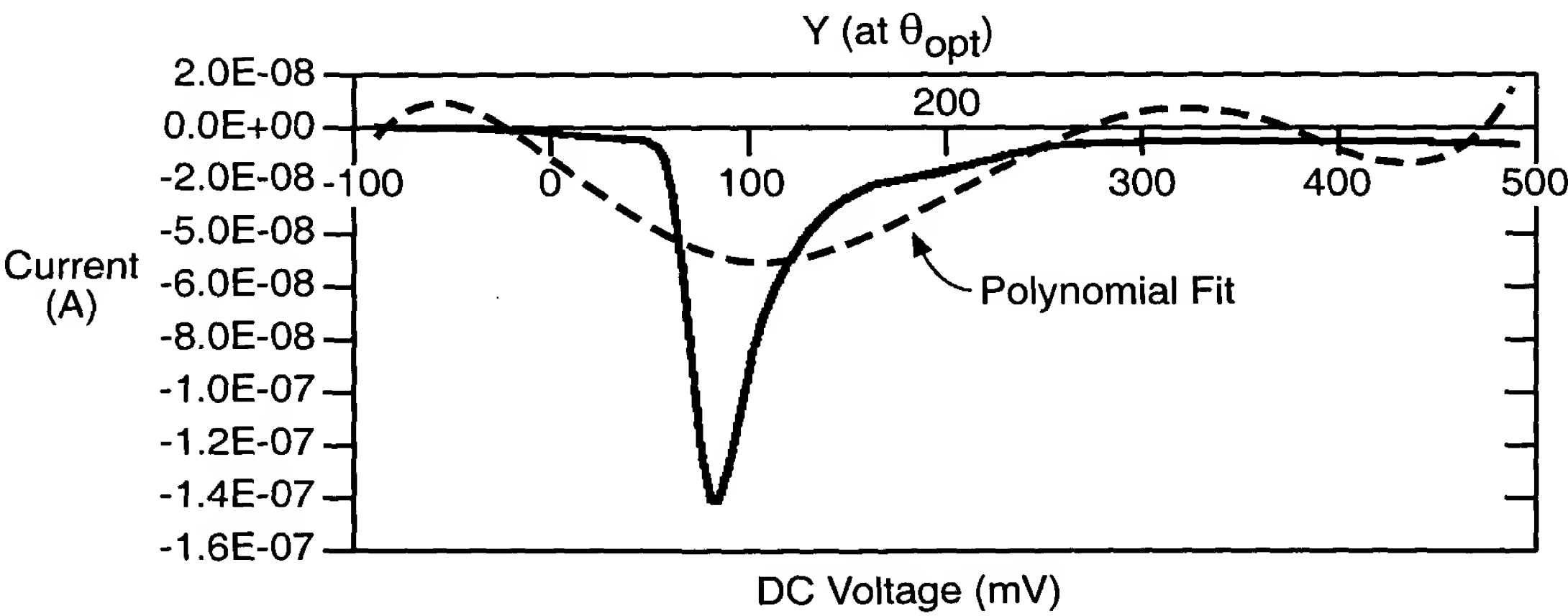
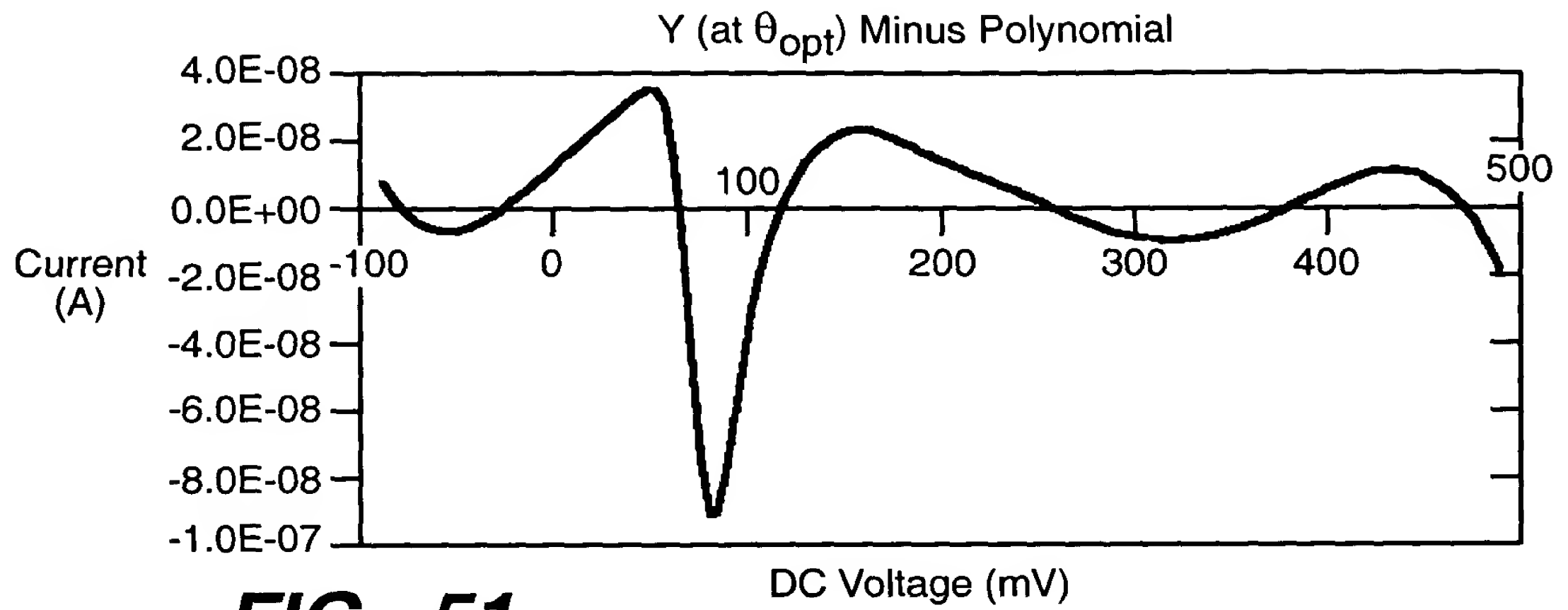
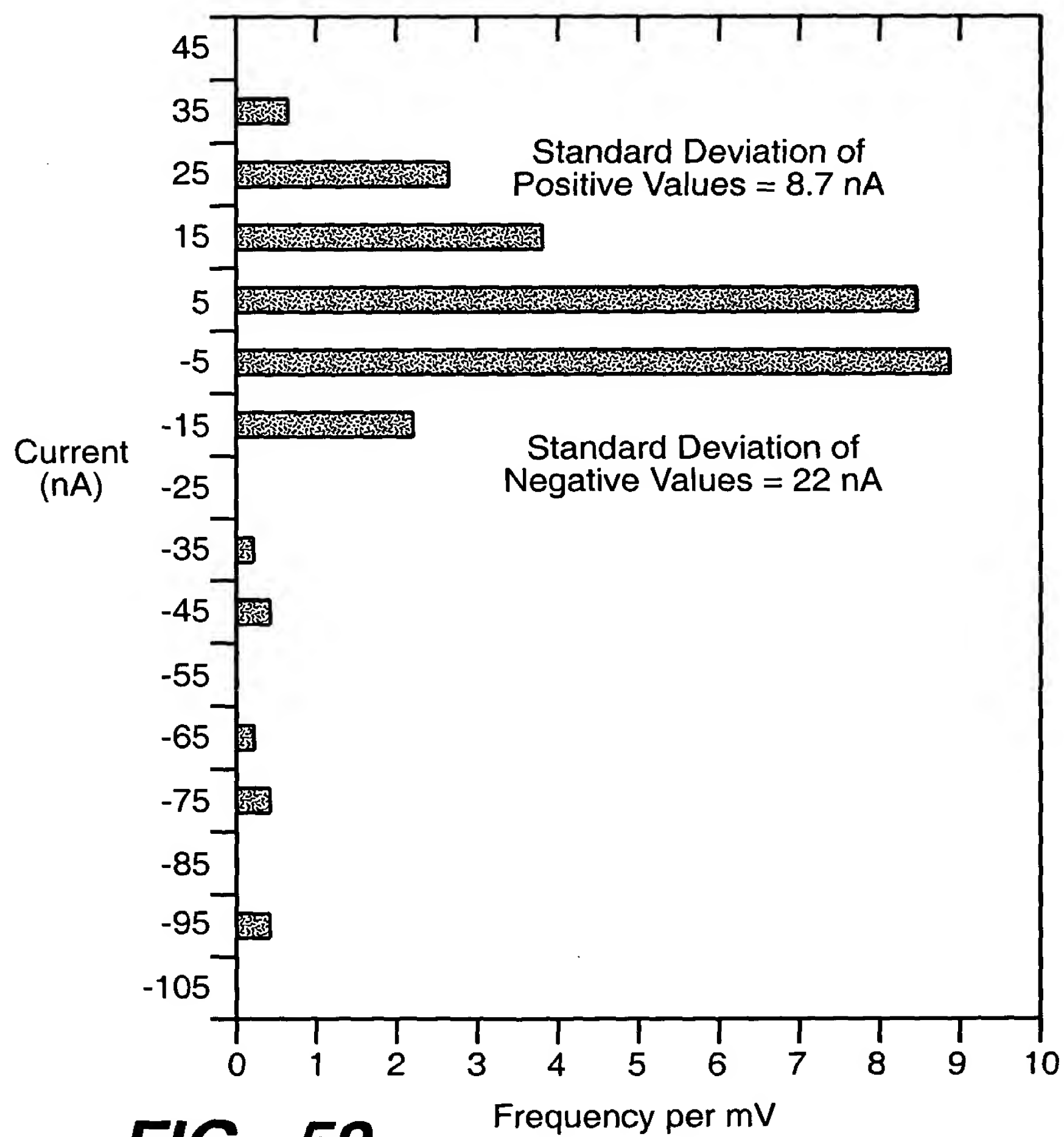
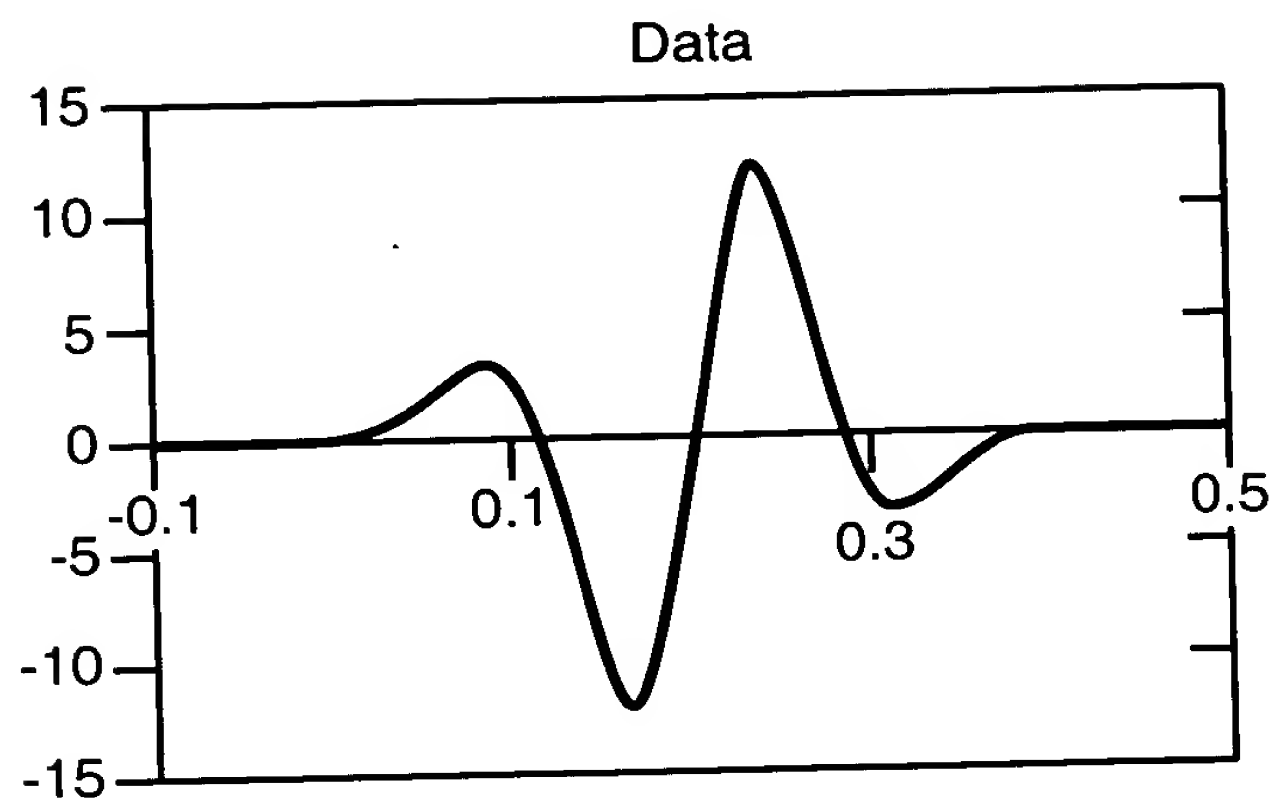
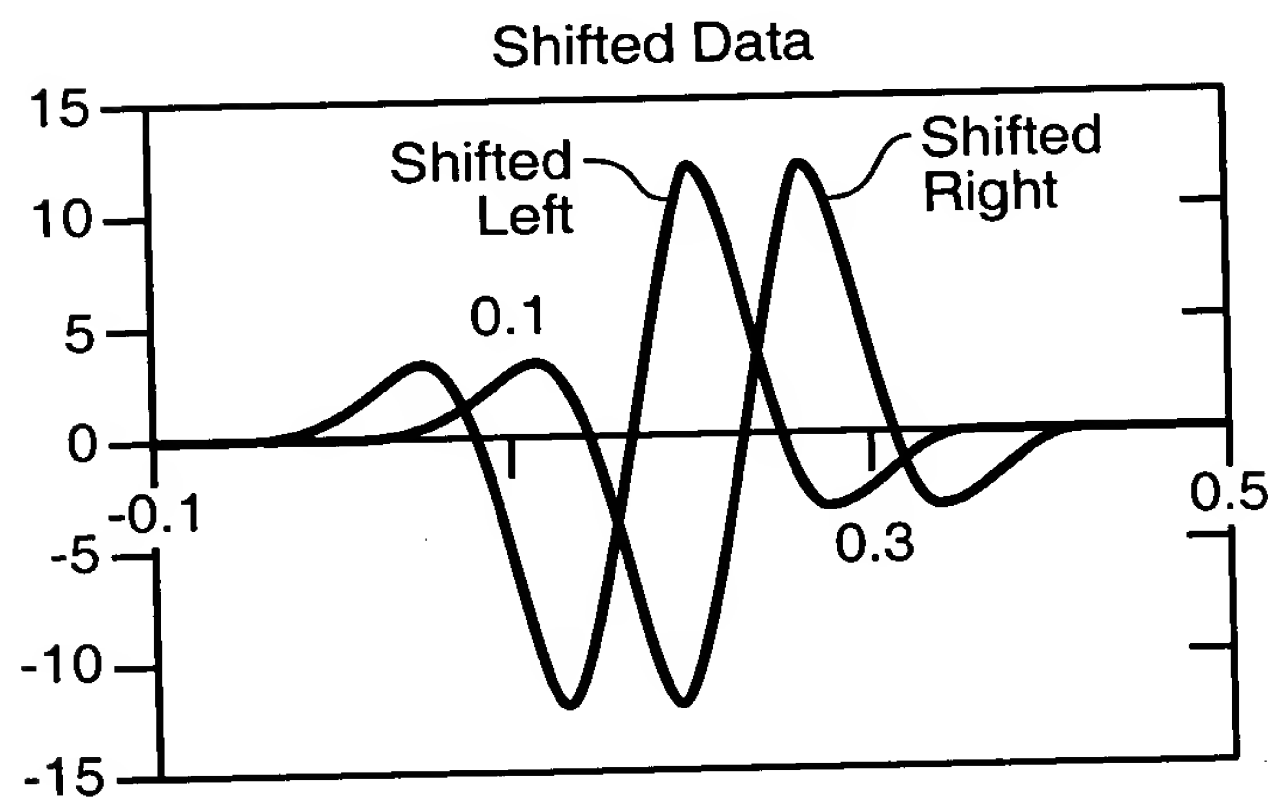
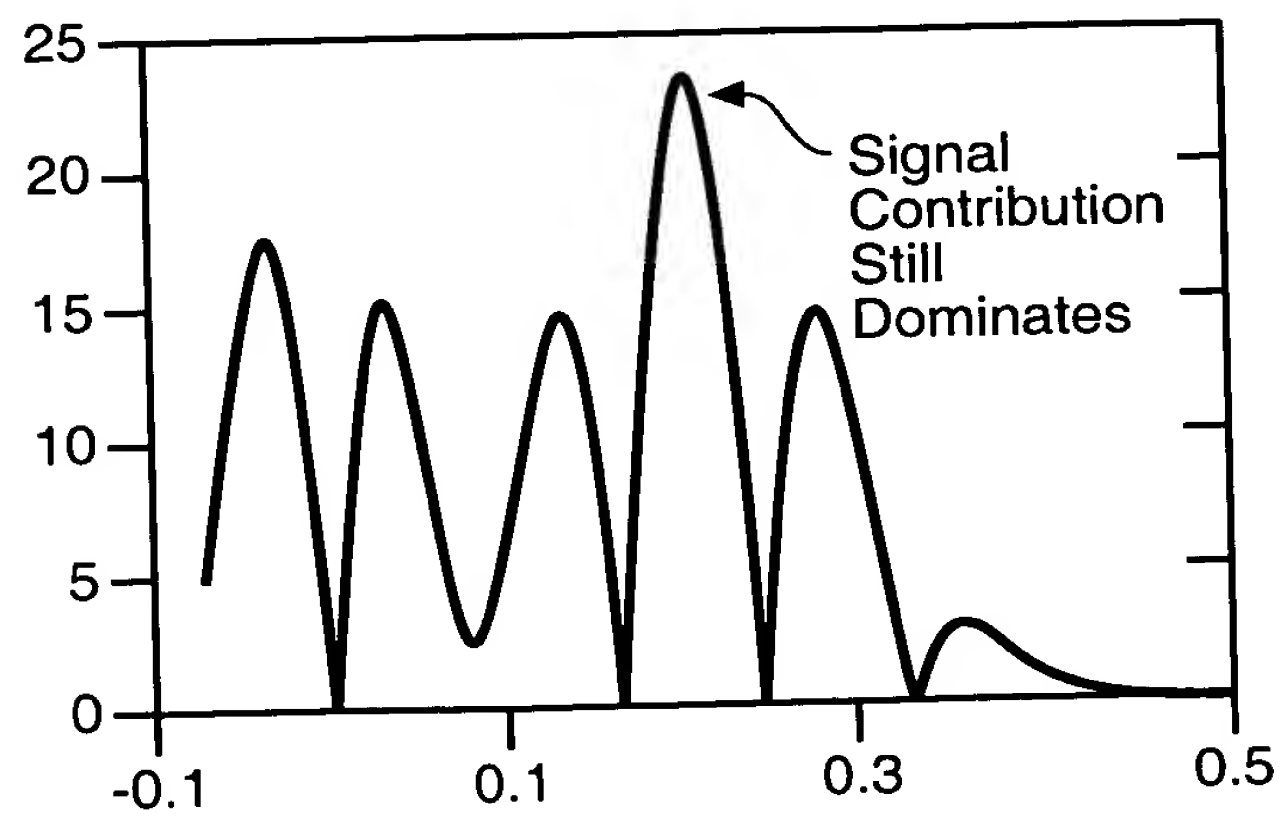
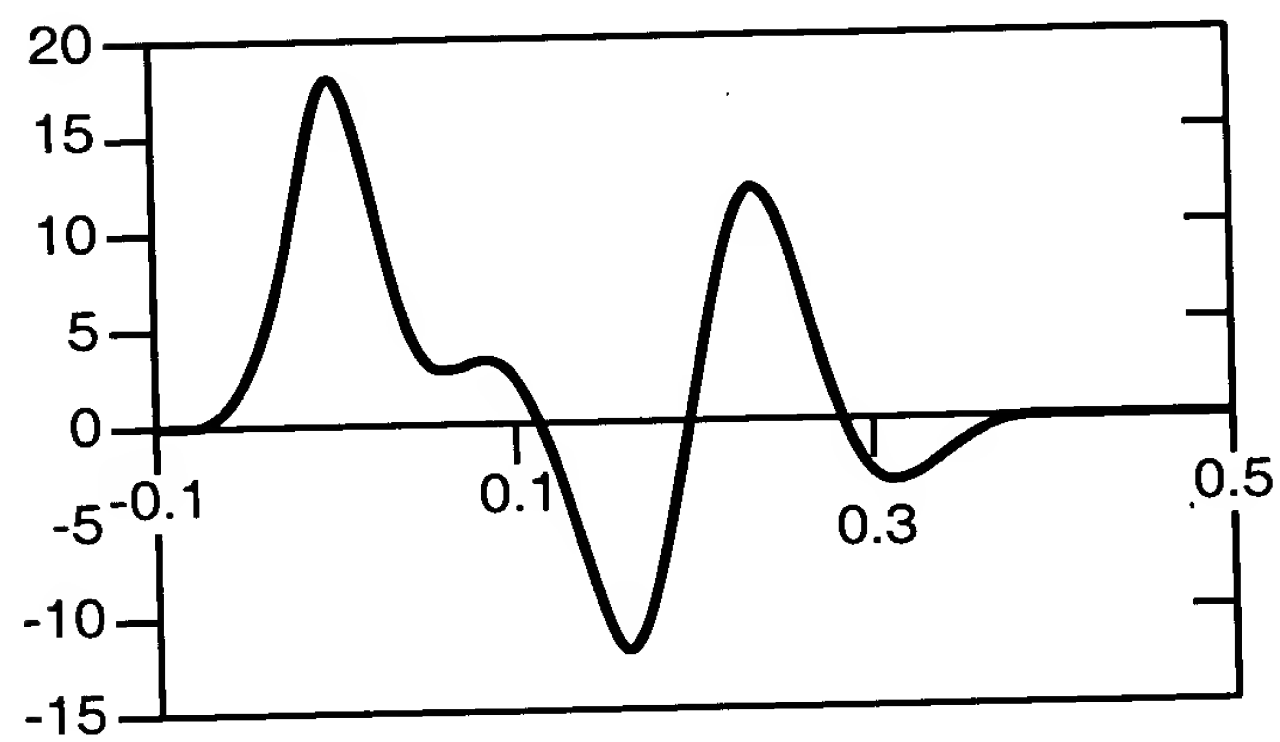
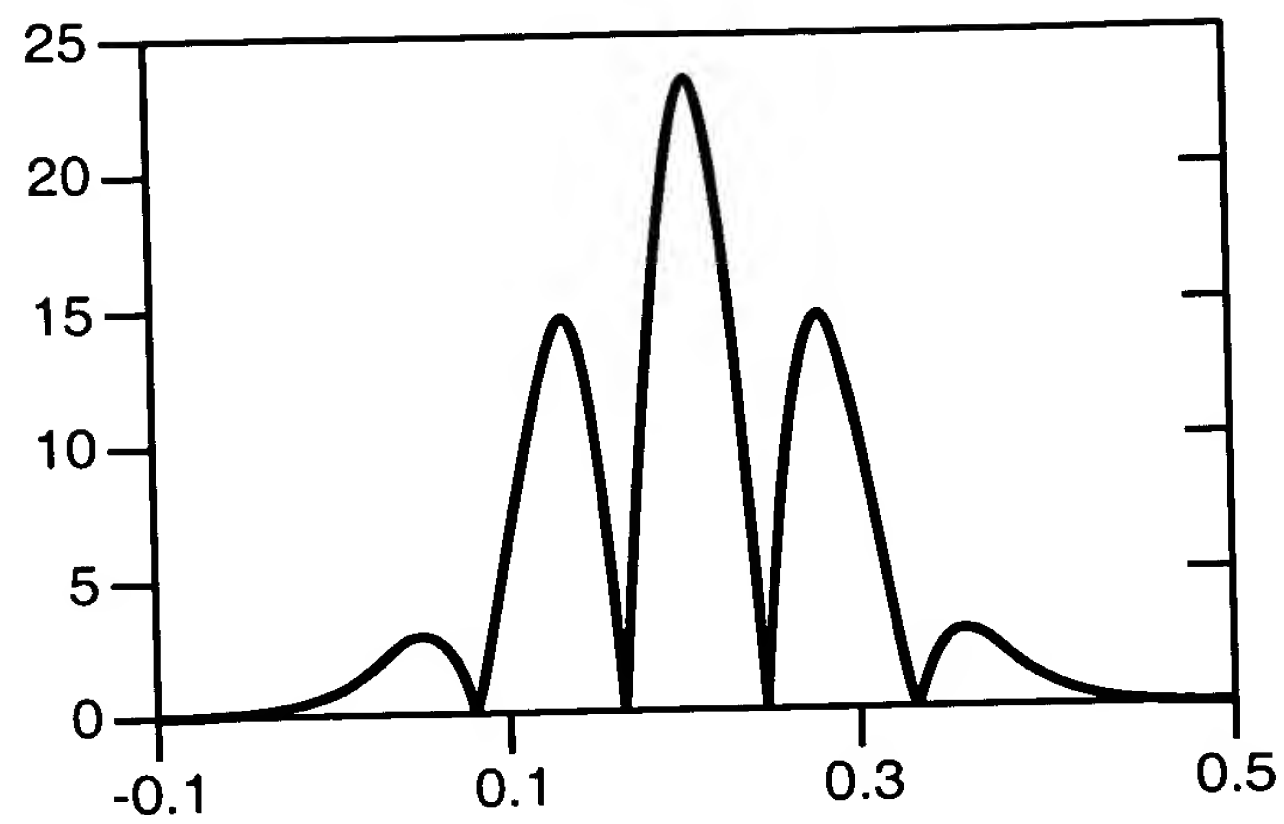
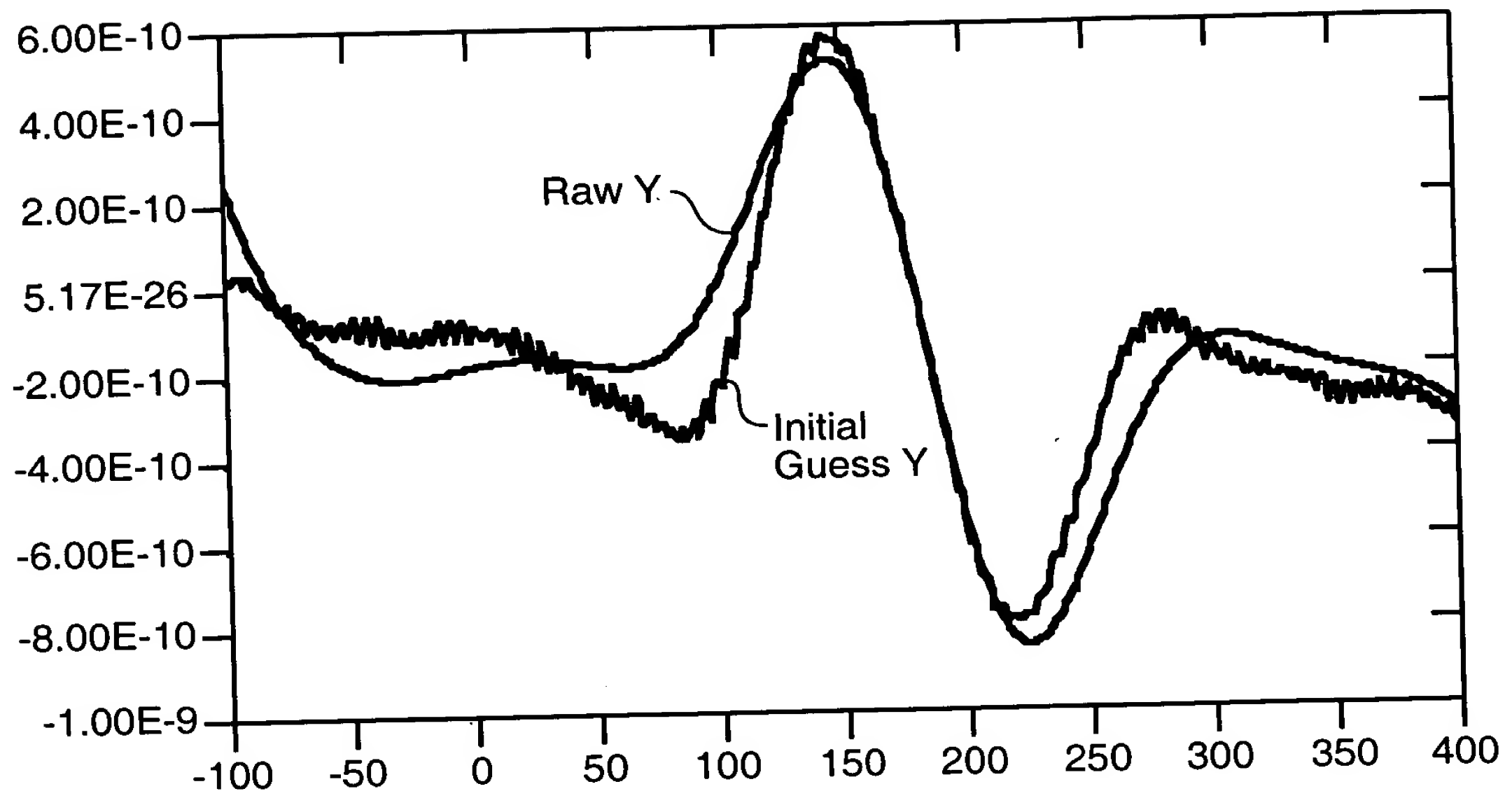
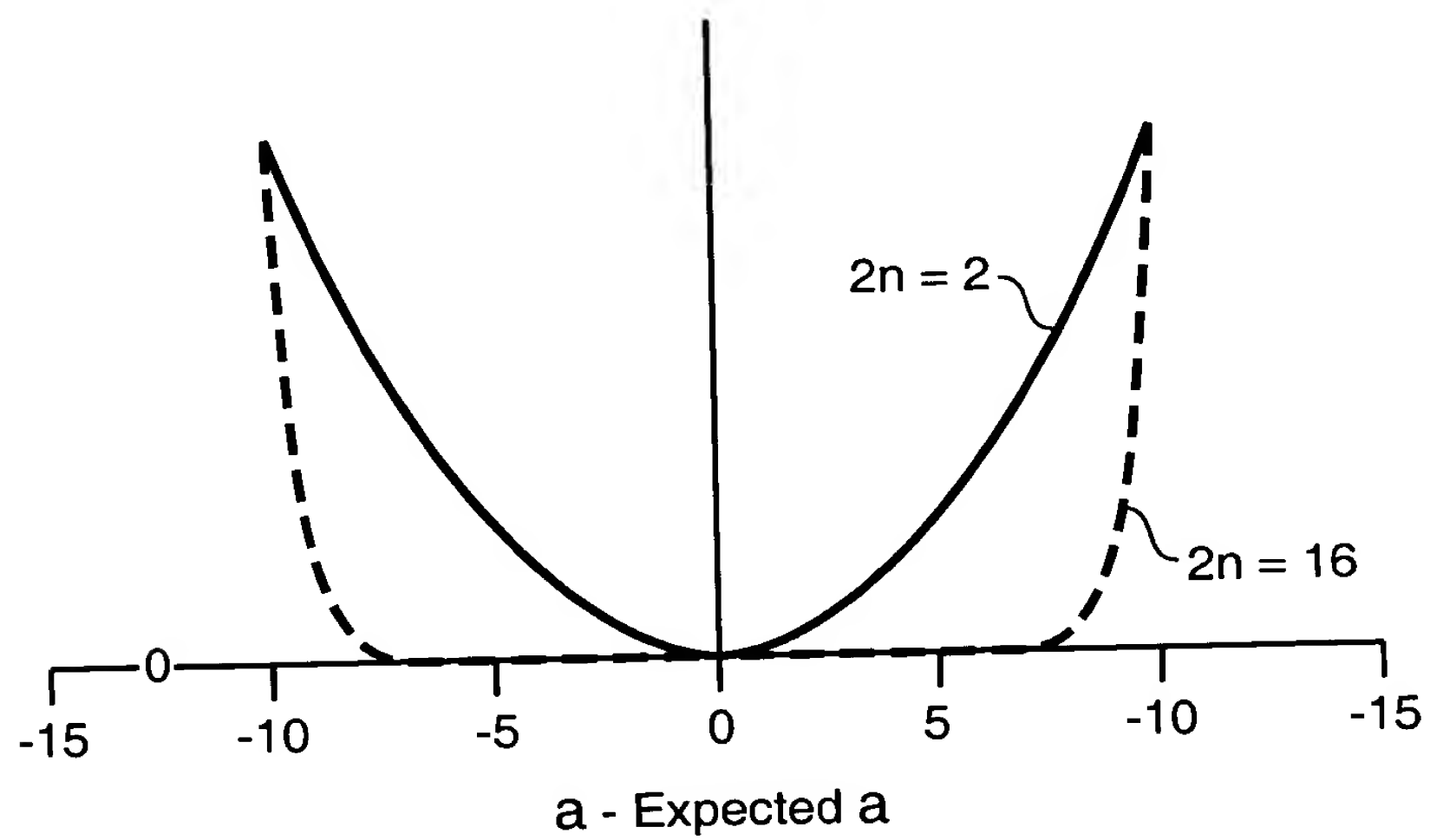


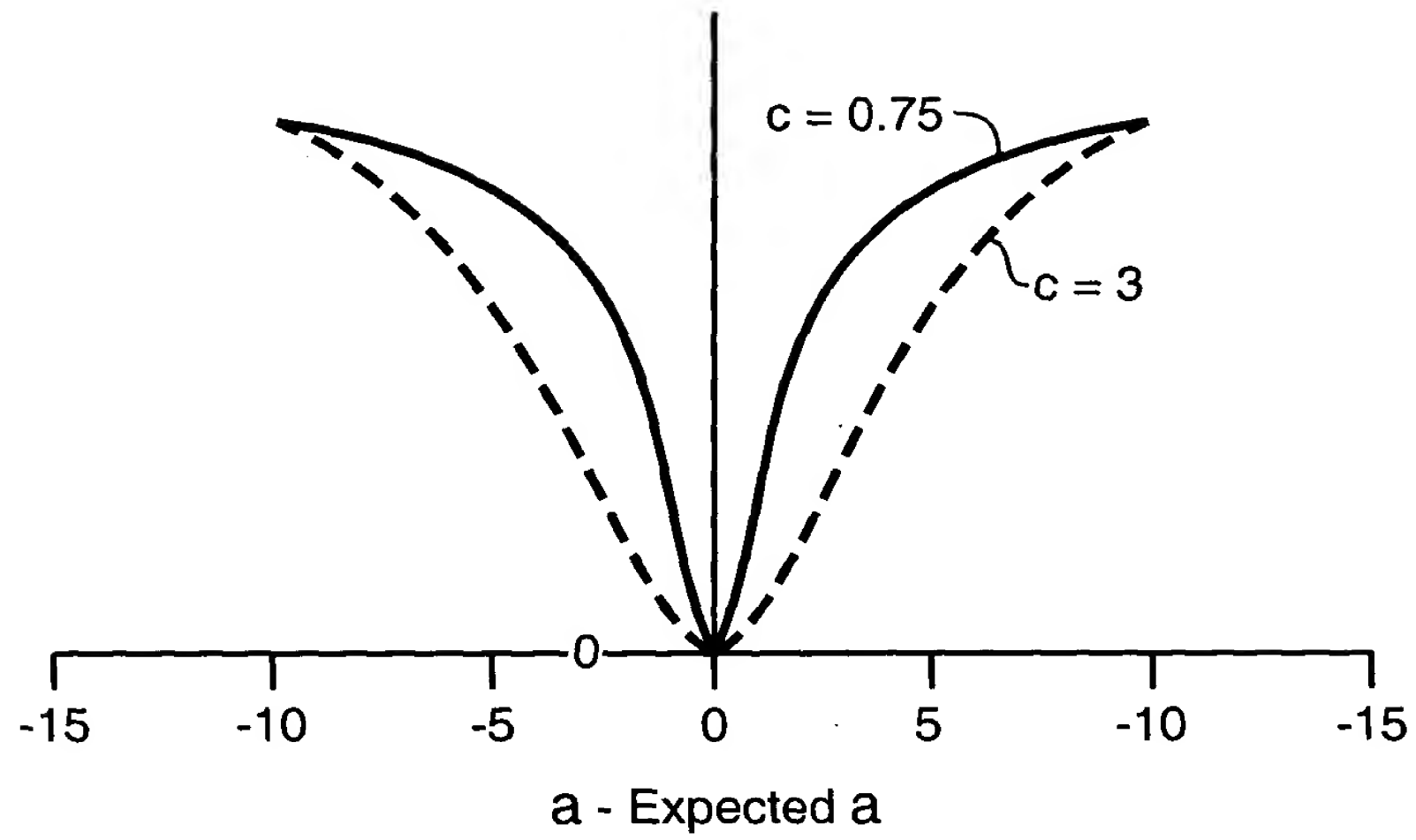
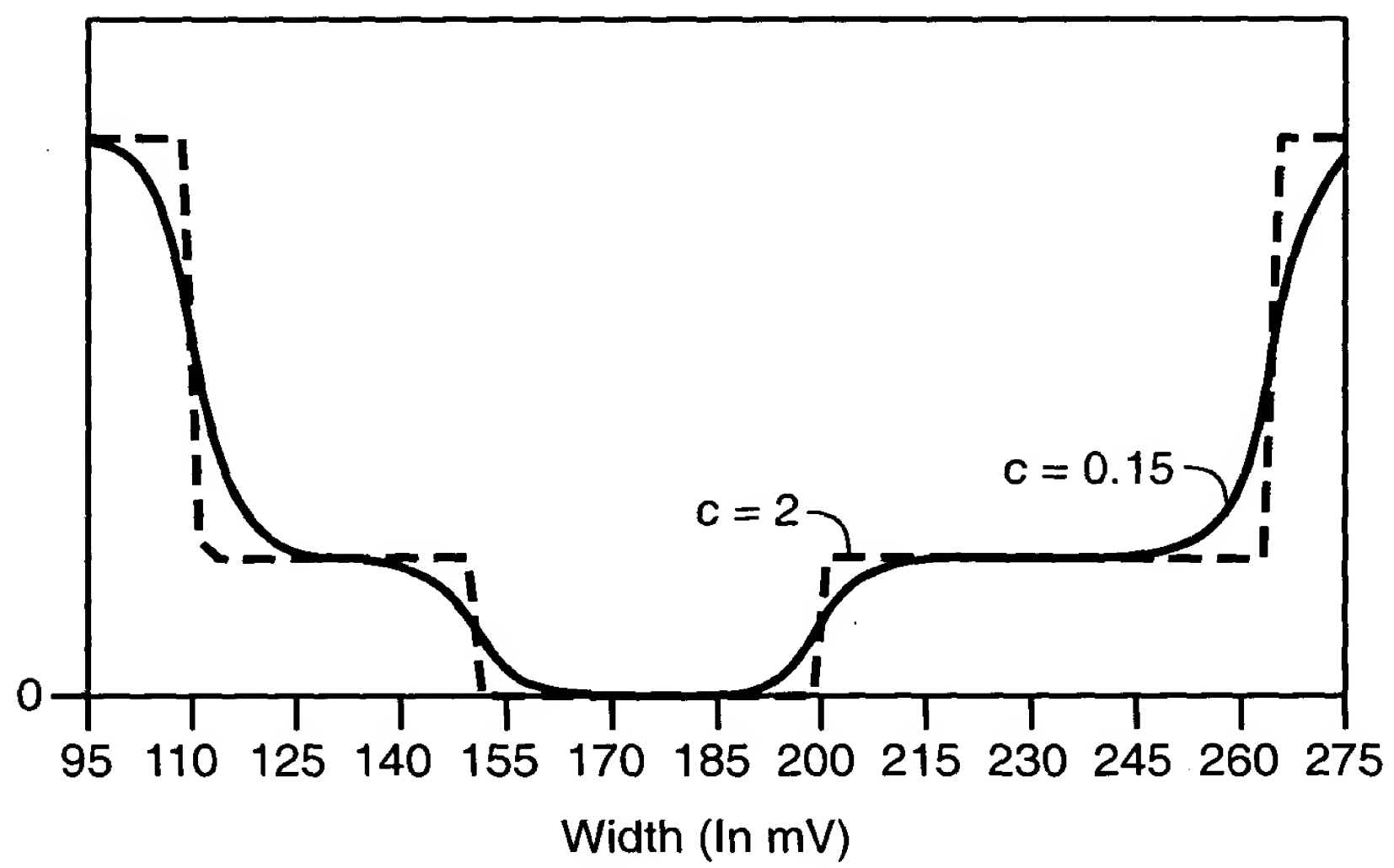
FIG._50

**FIG._51****FIG._52**

**FIG. 53****FIG. 54**



**FIG._58****FIG._59**

**FIG. 60****FIG. 61**

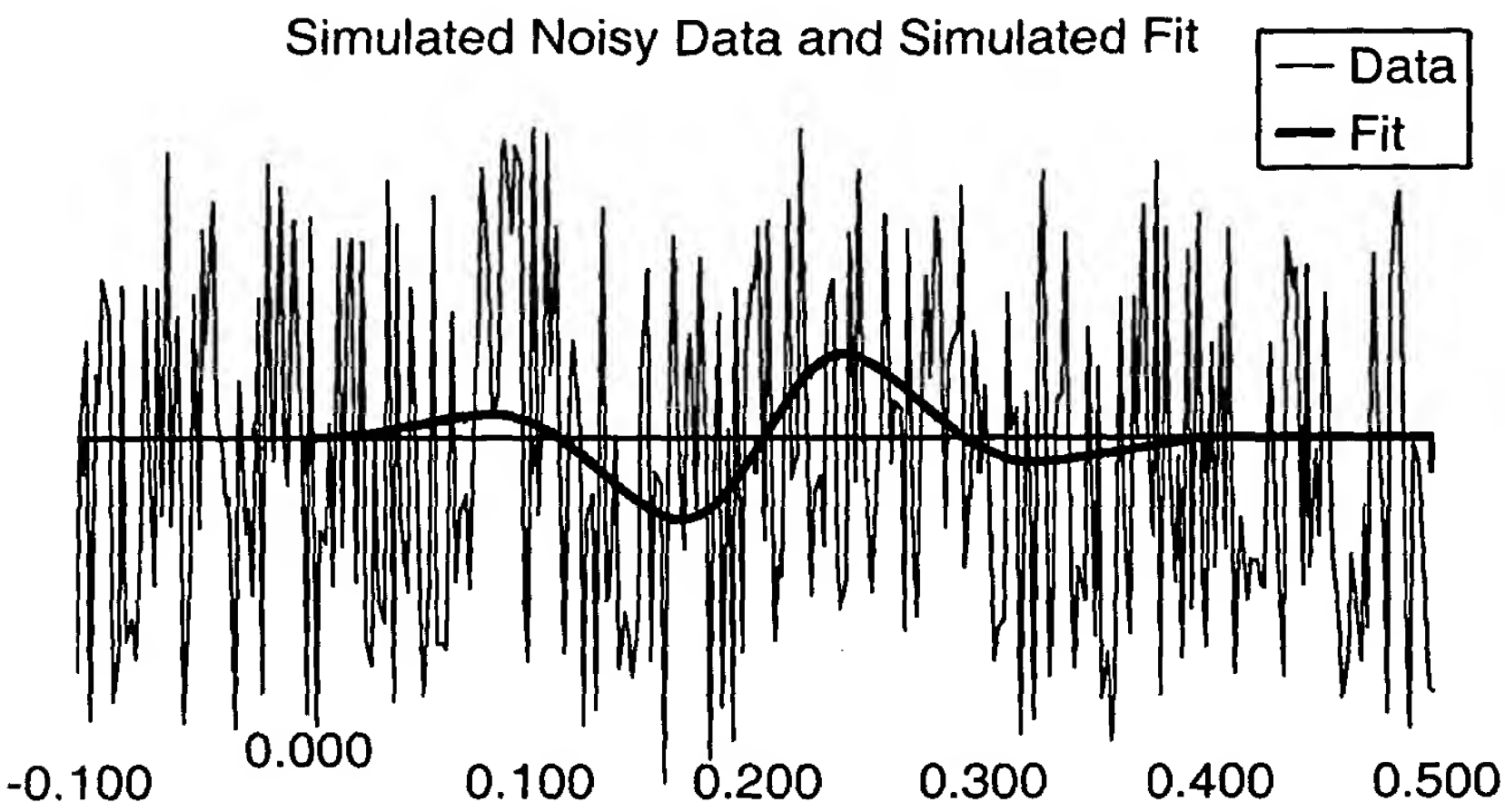


FIG._62

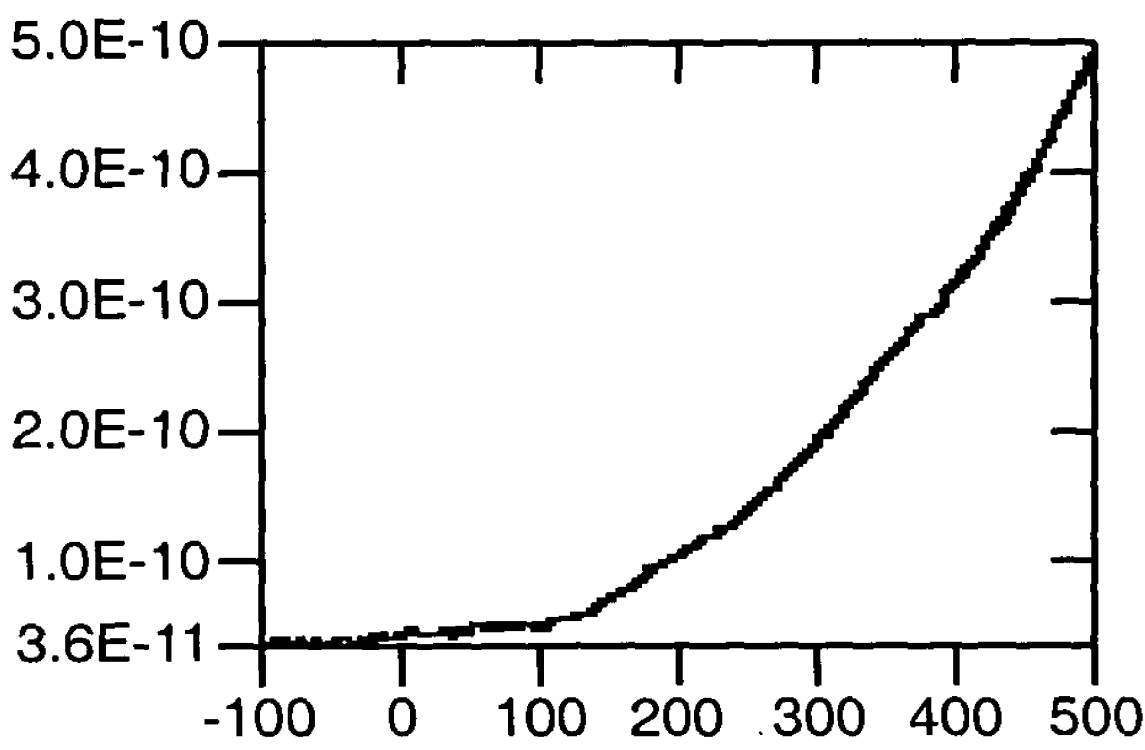


FIG._63

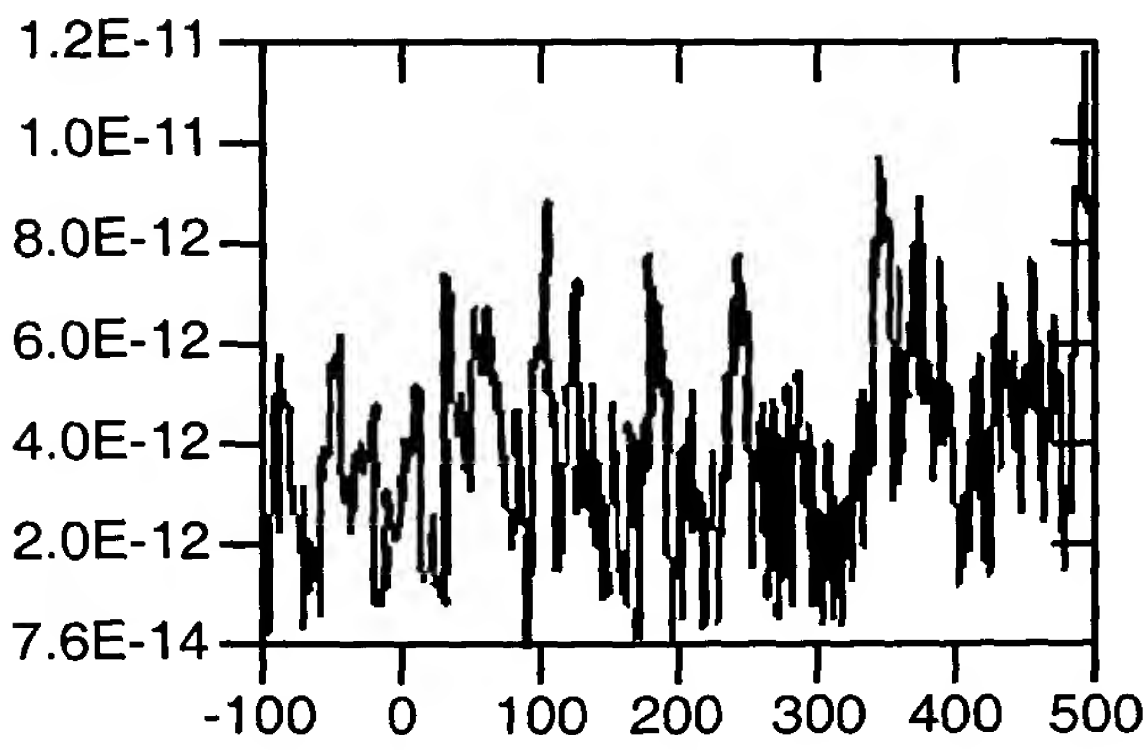
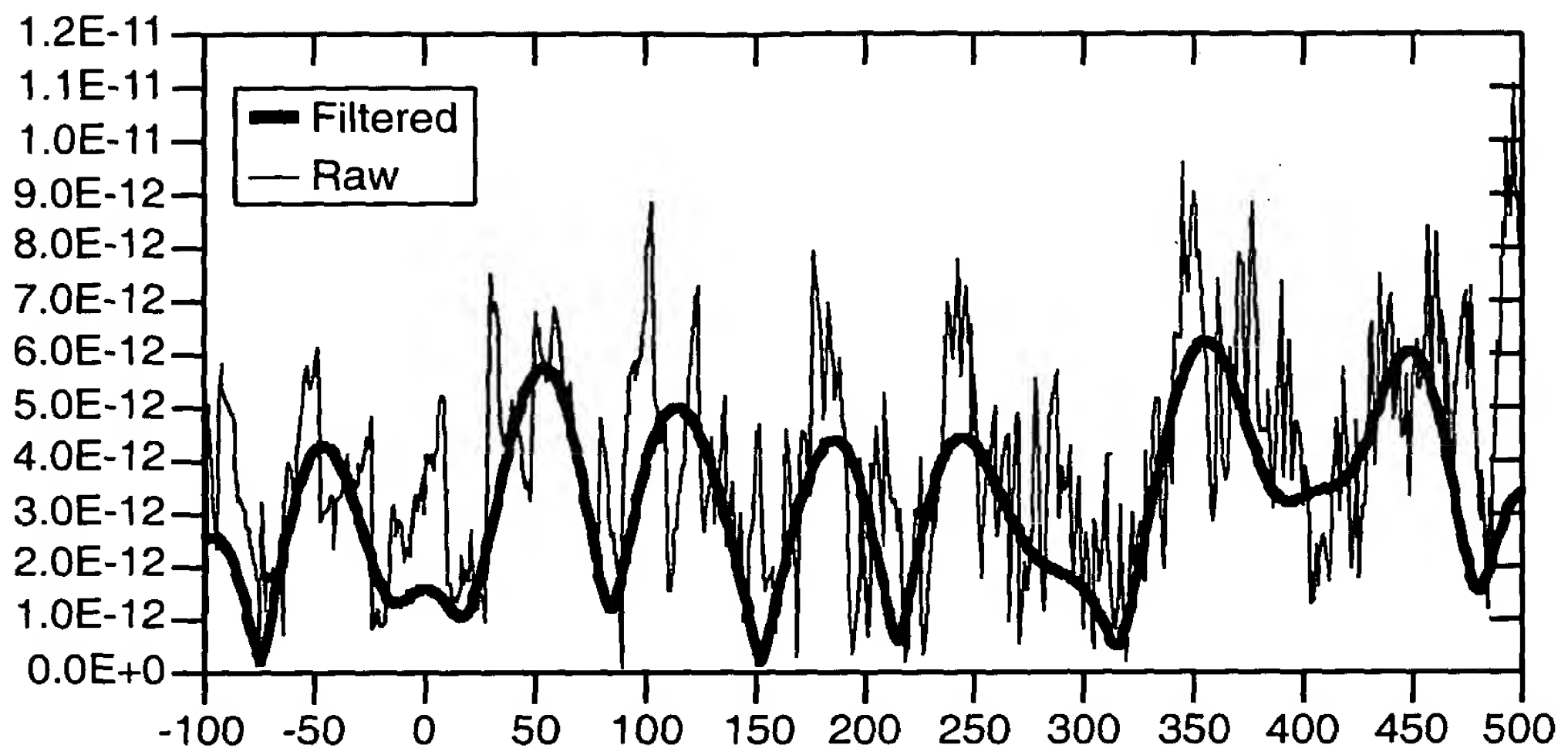
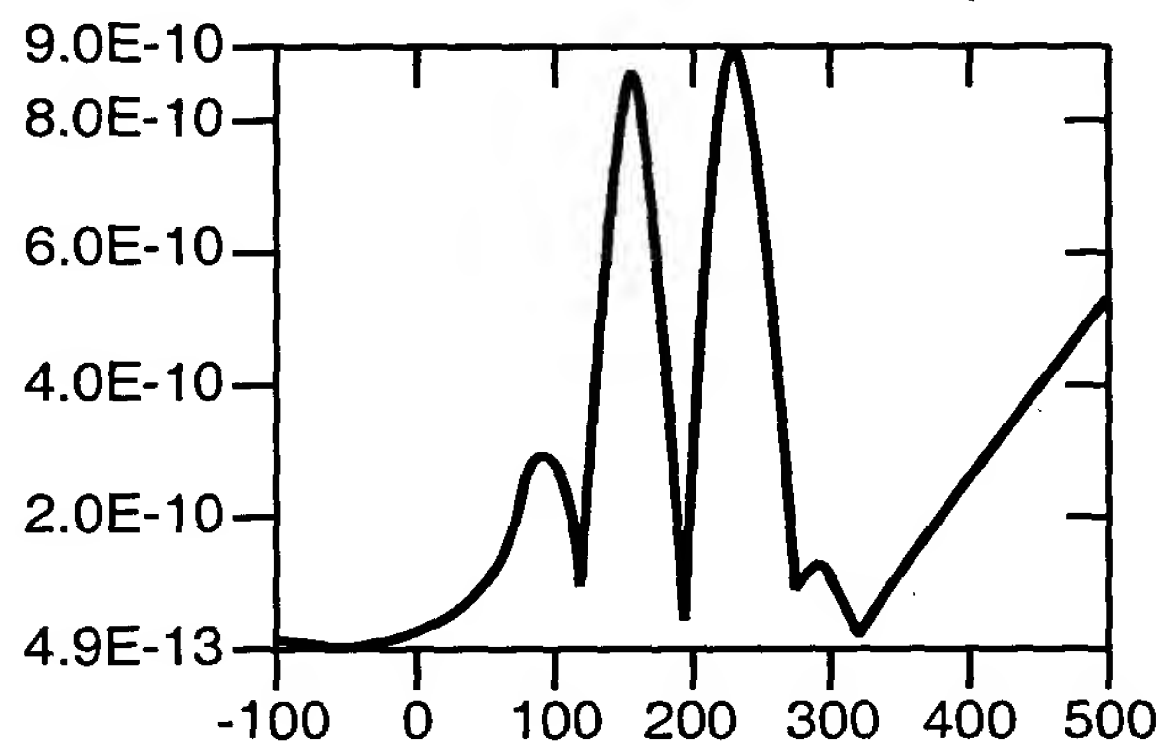
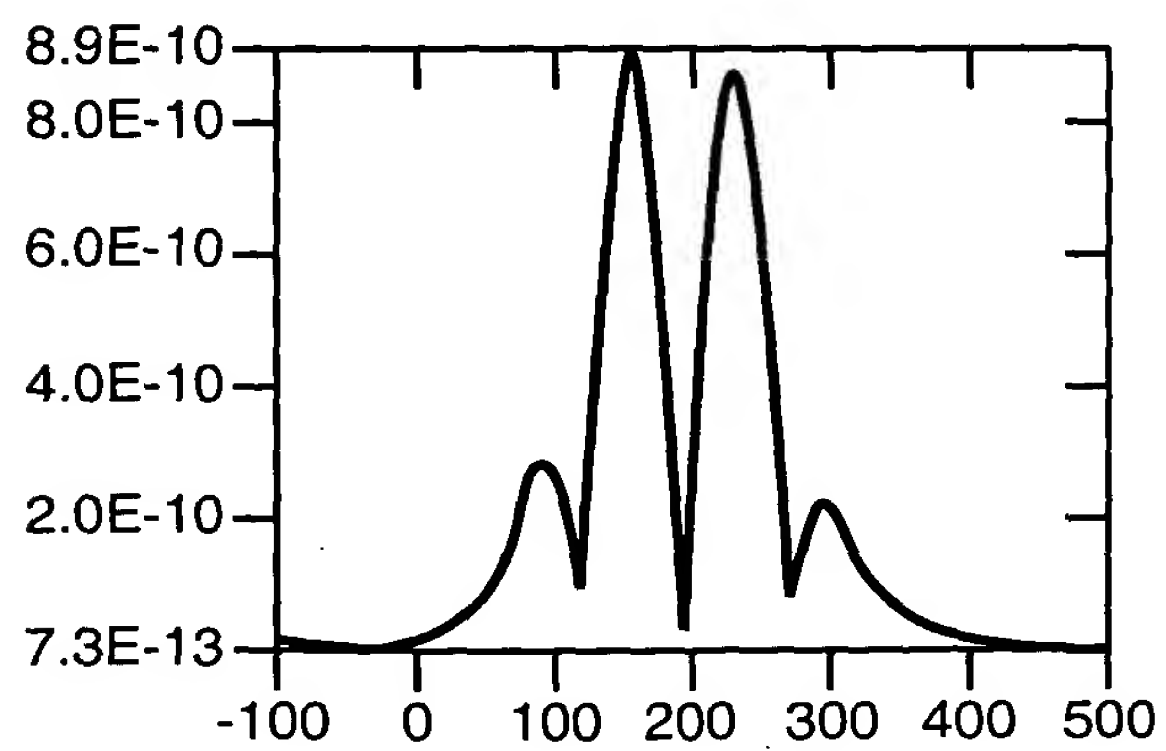
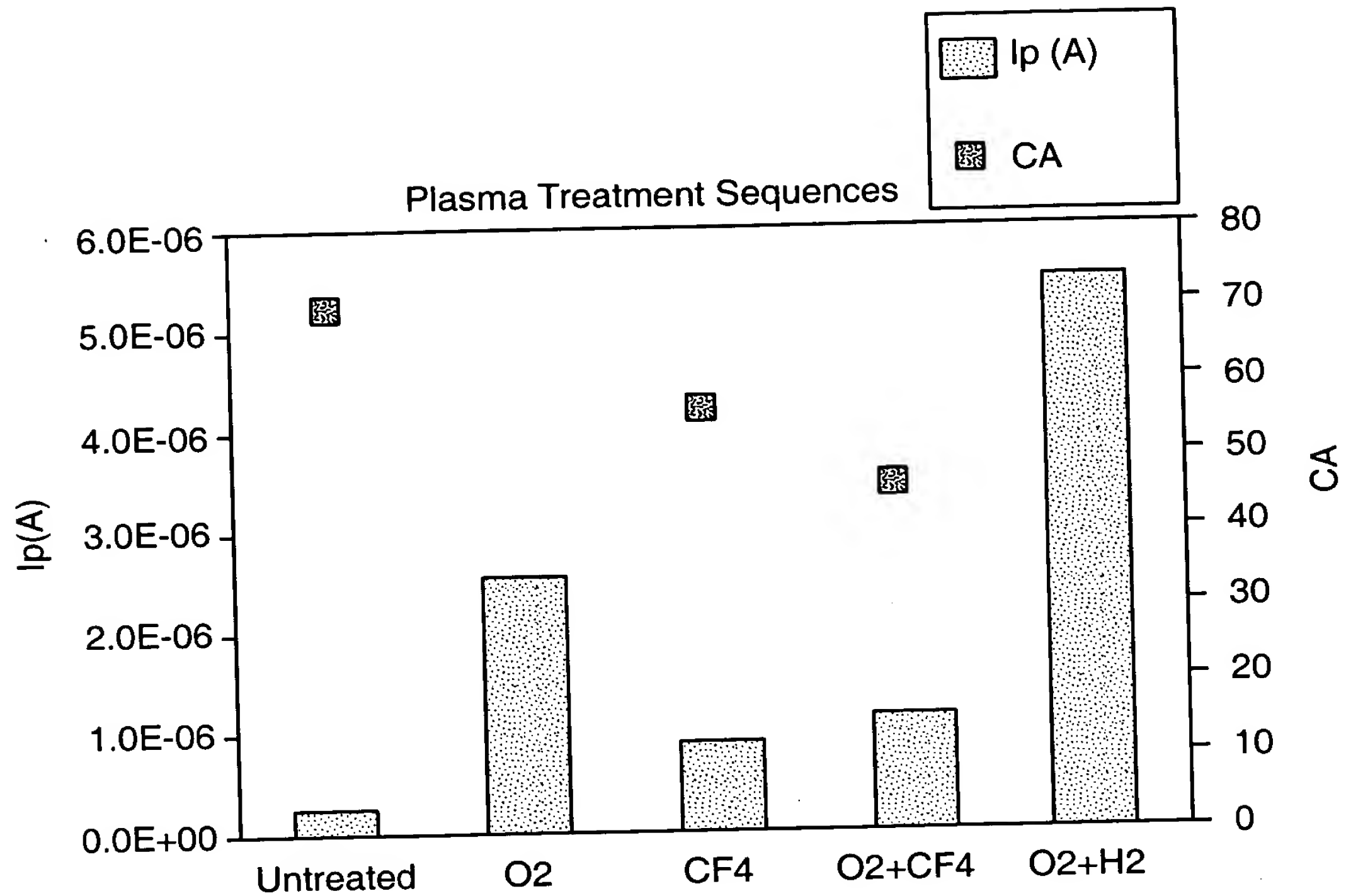
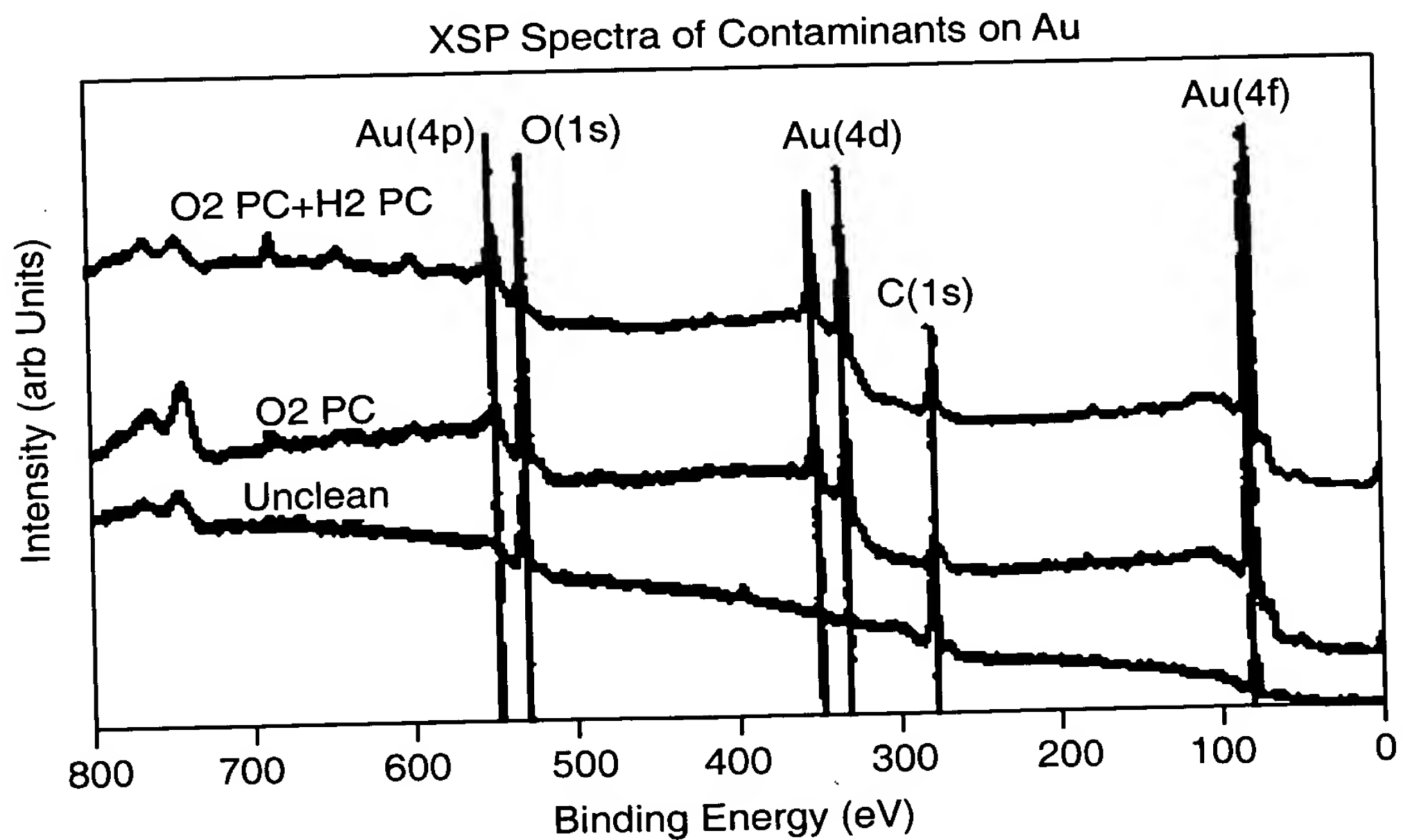
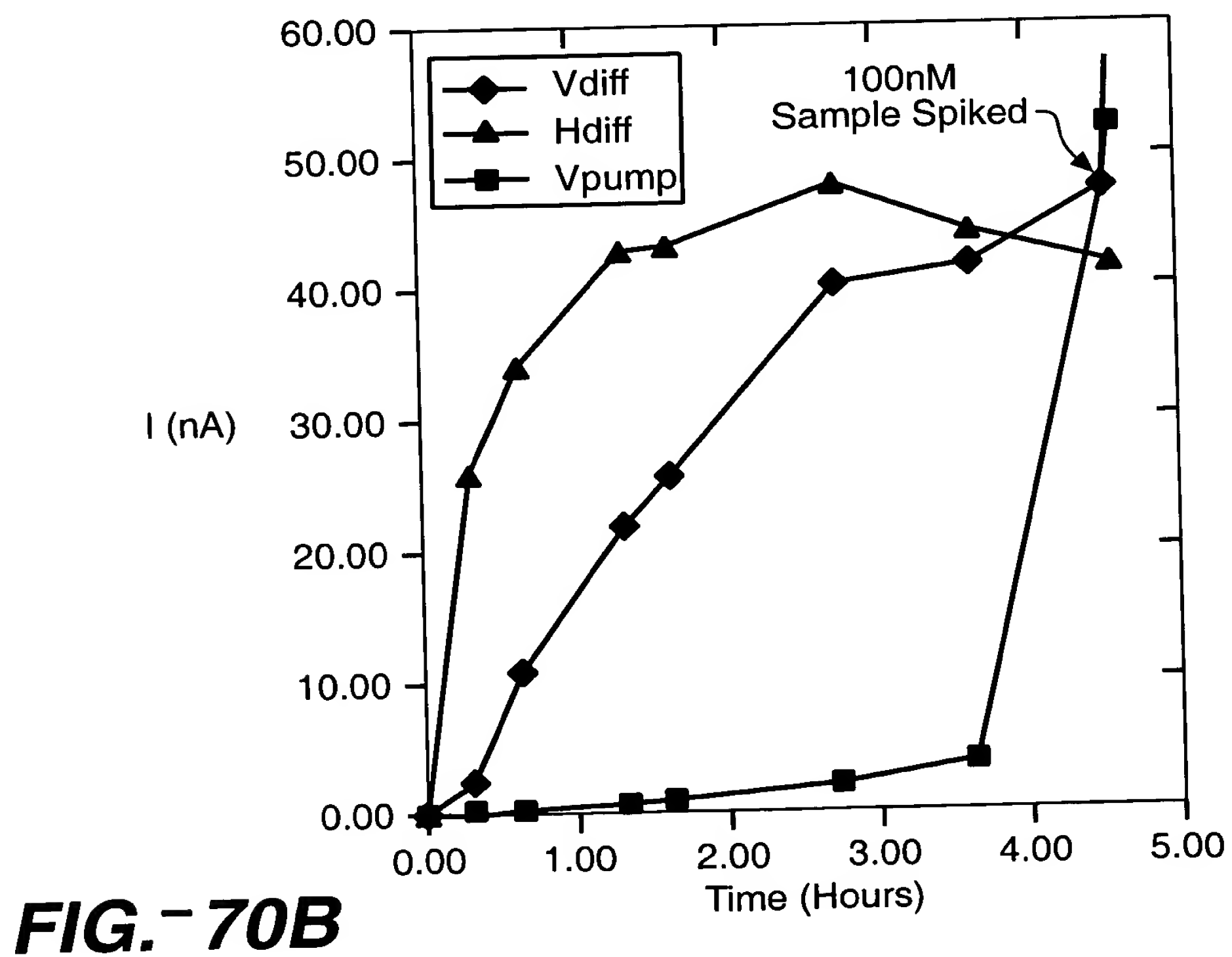
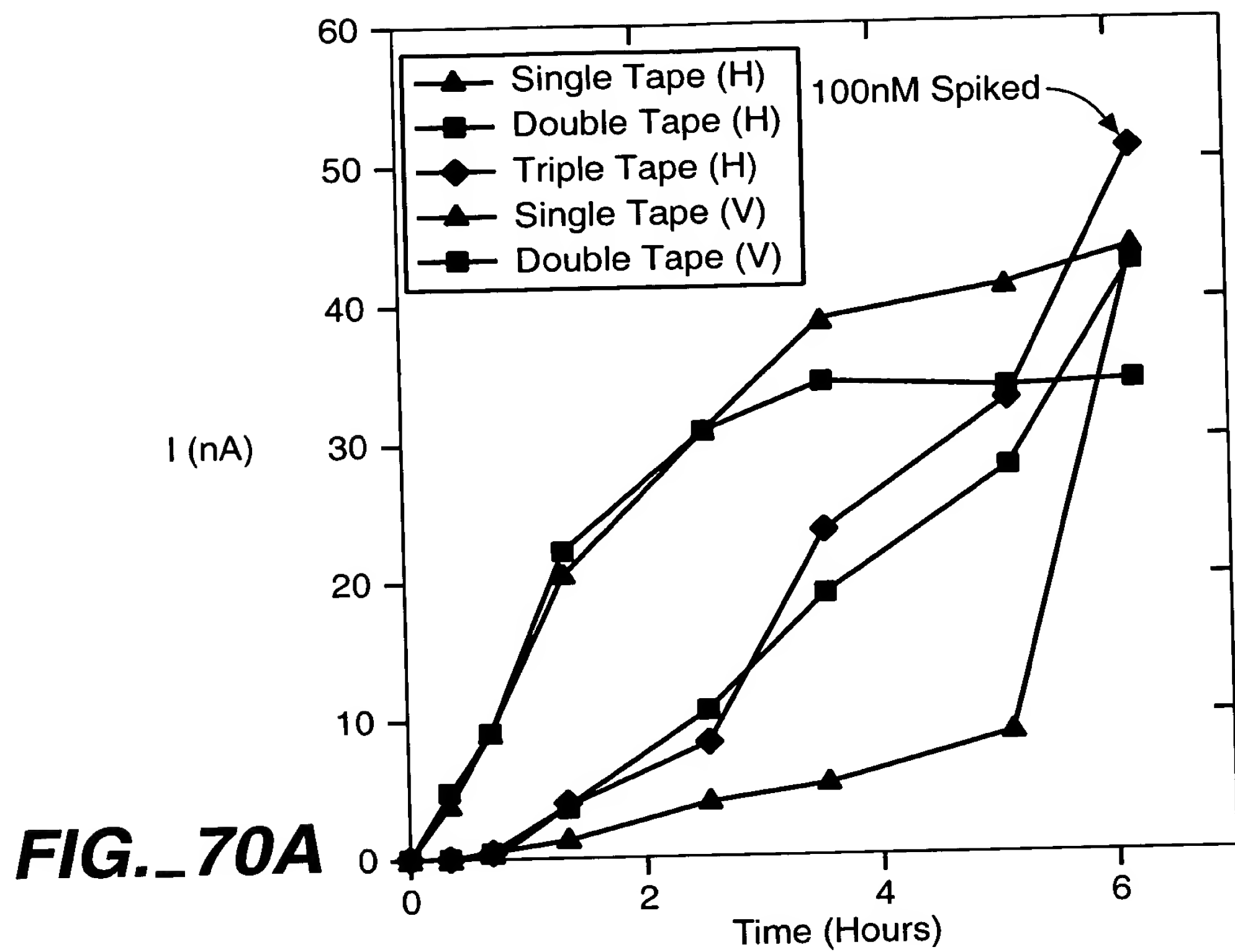


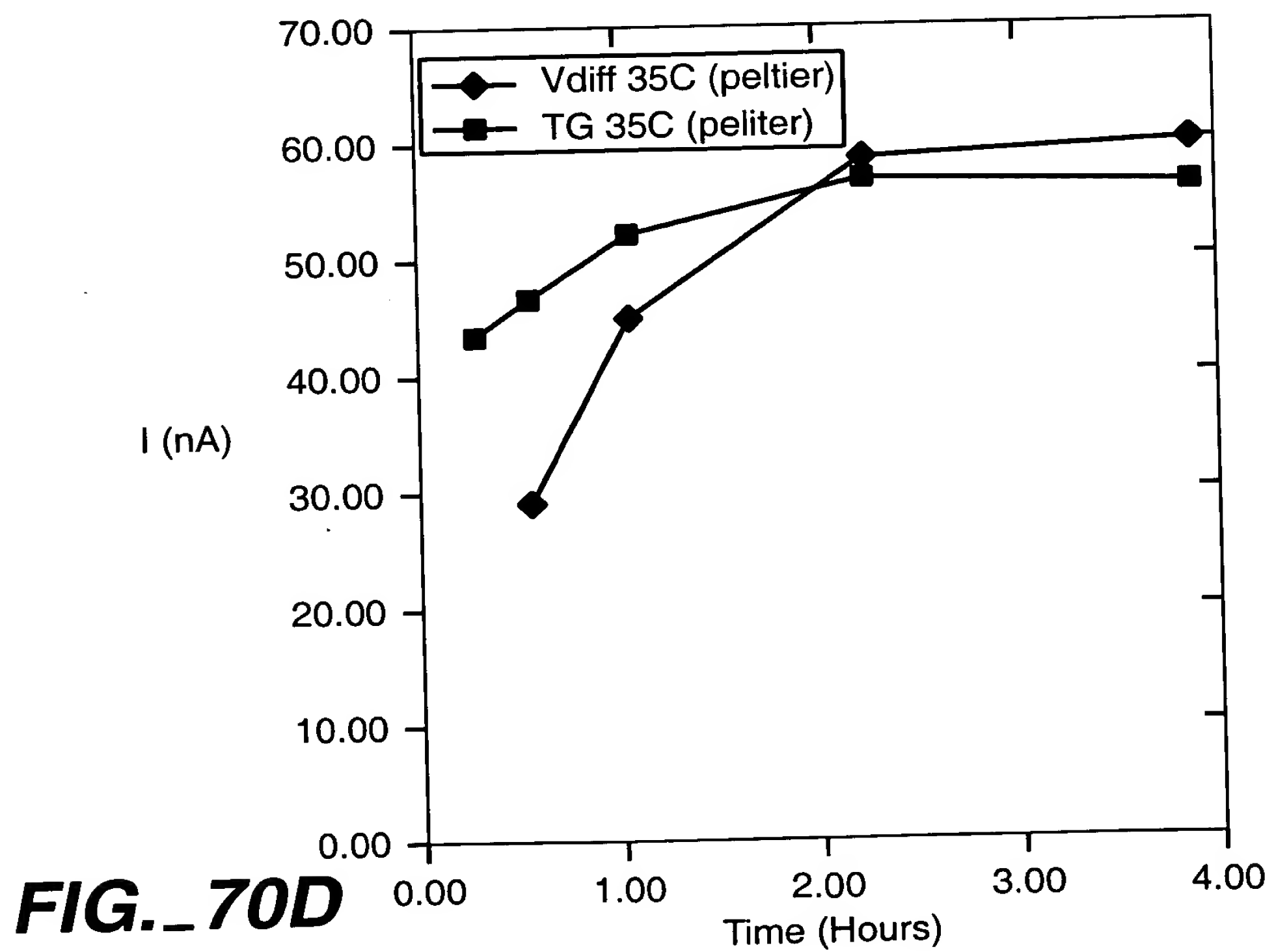
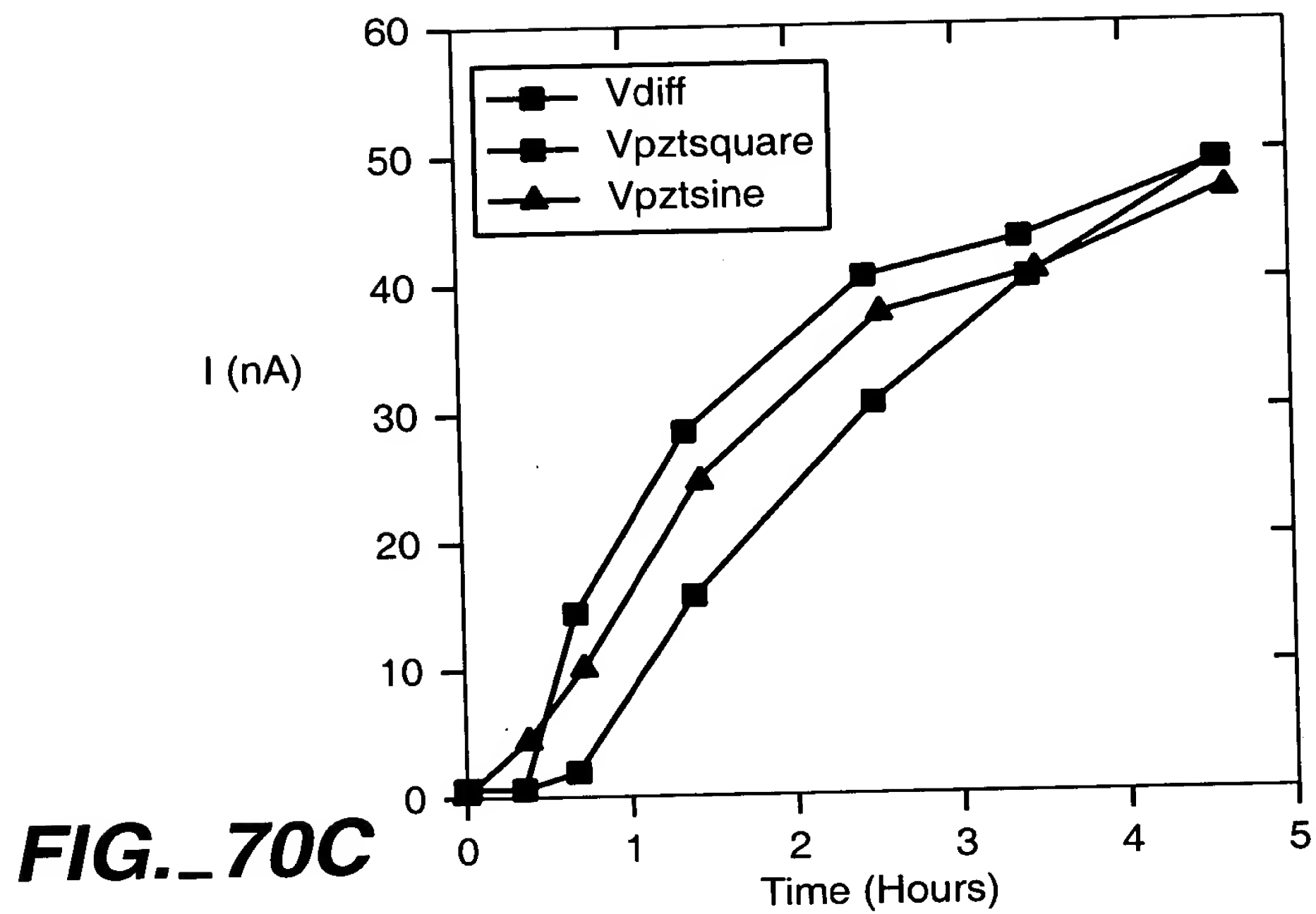
FIG._64

**FIG._65****FIG._66****FIG._67**

**FIG._68****FIG._69**



45 / 49



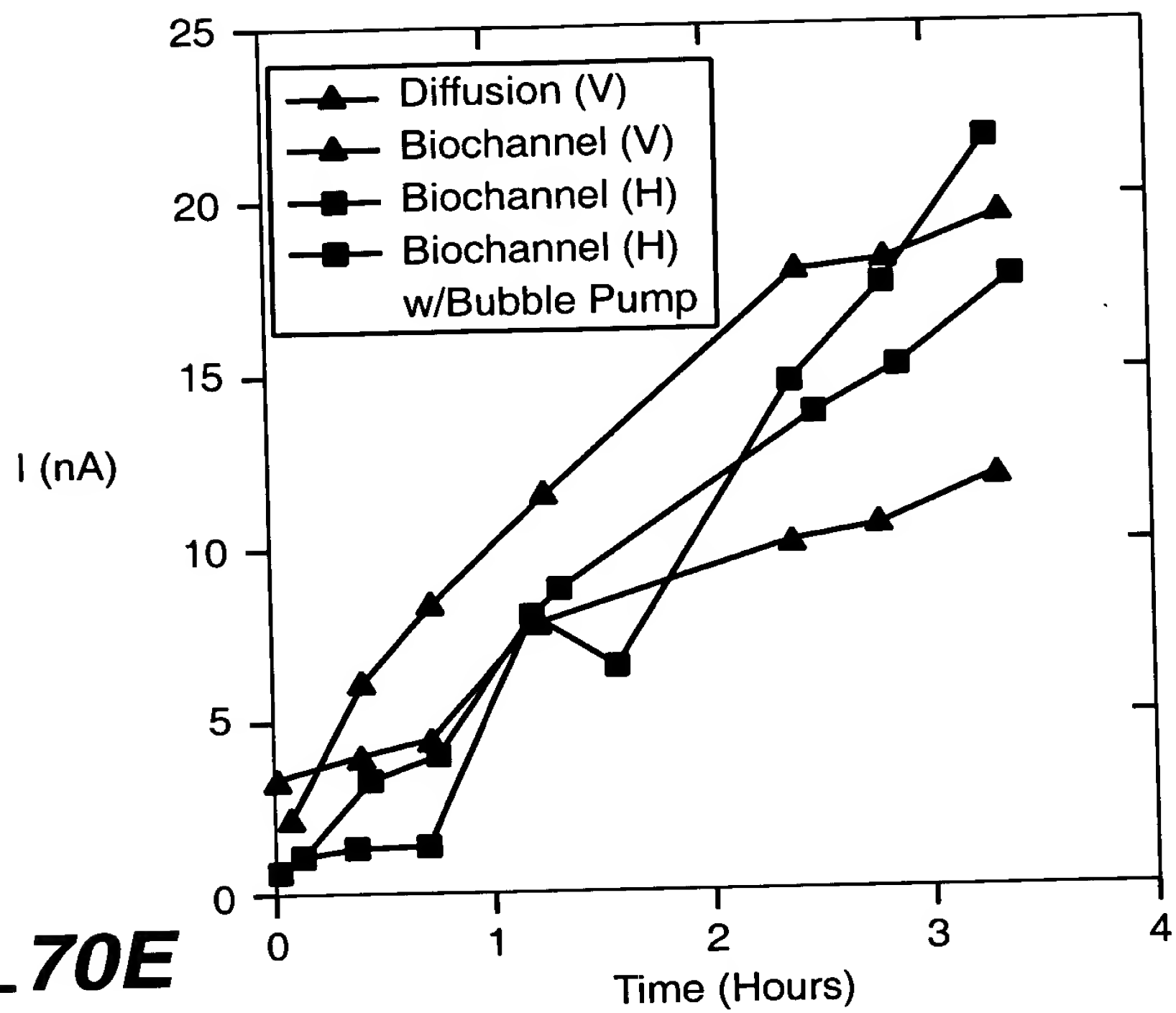
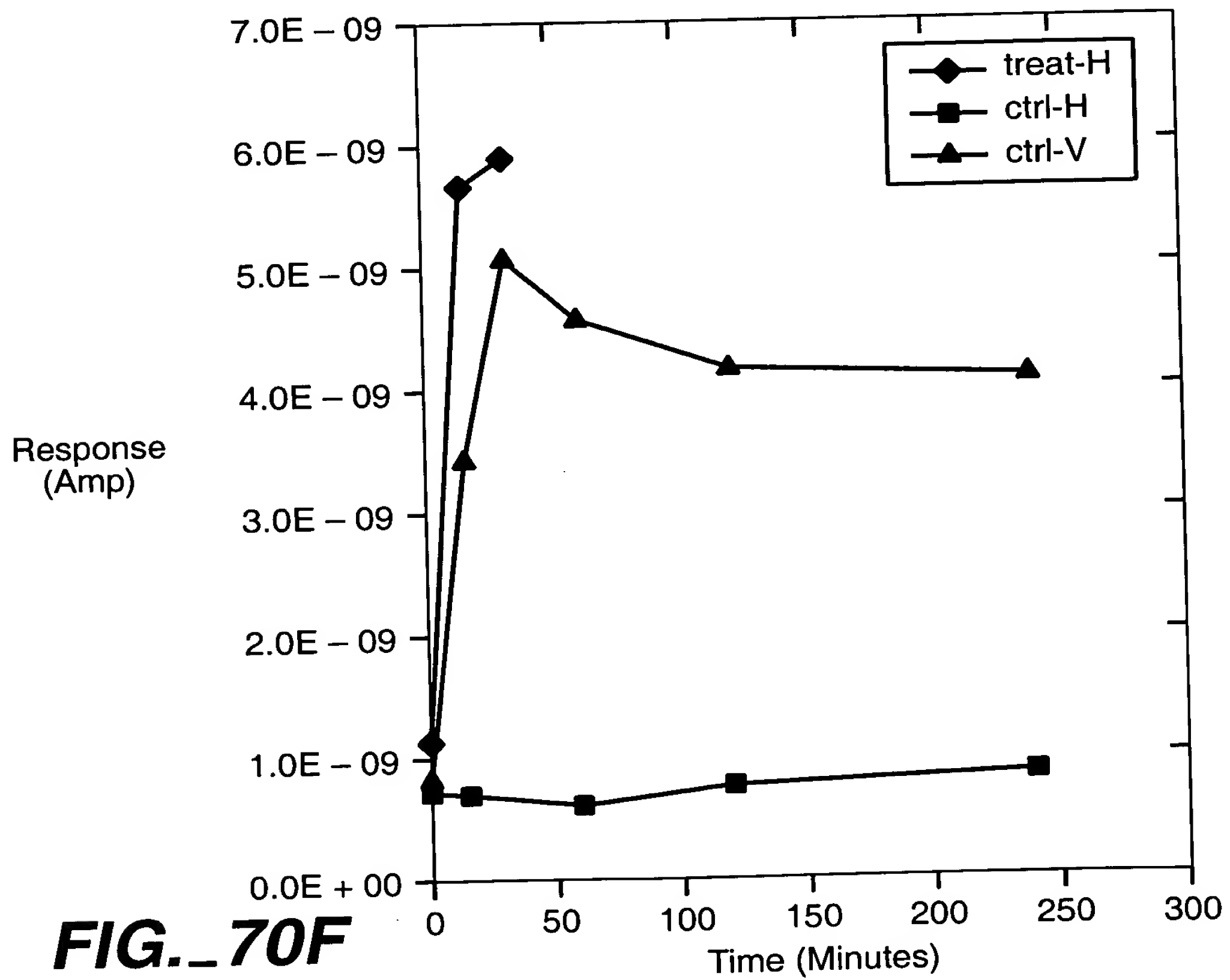
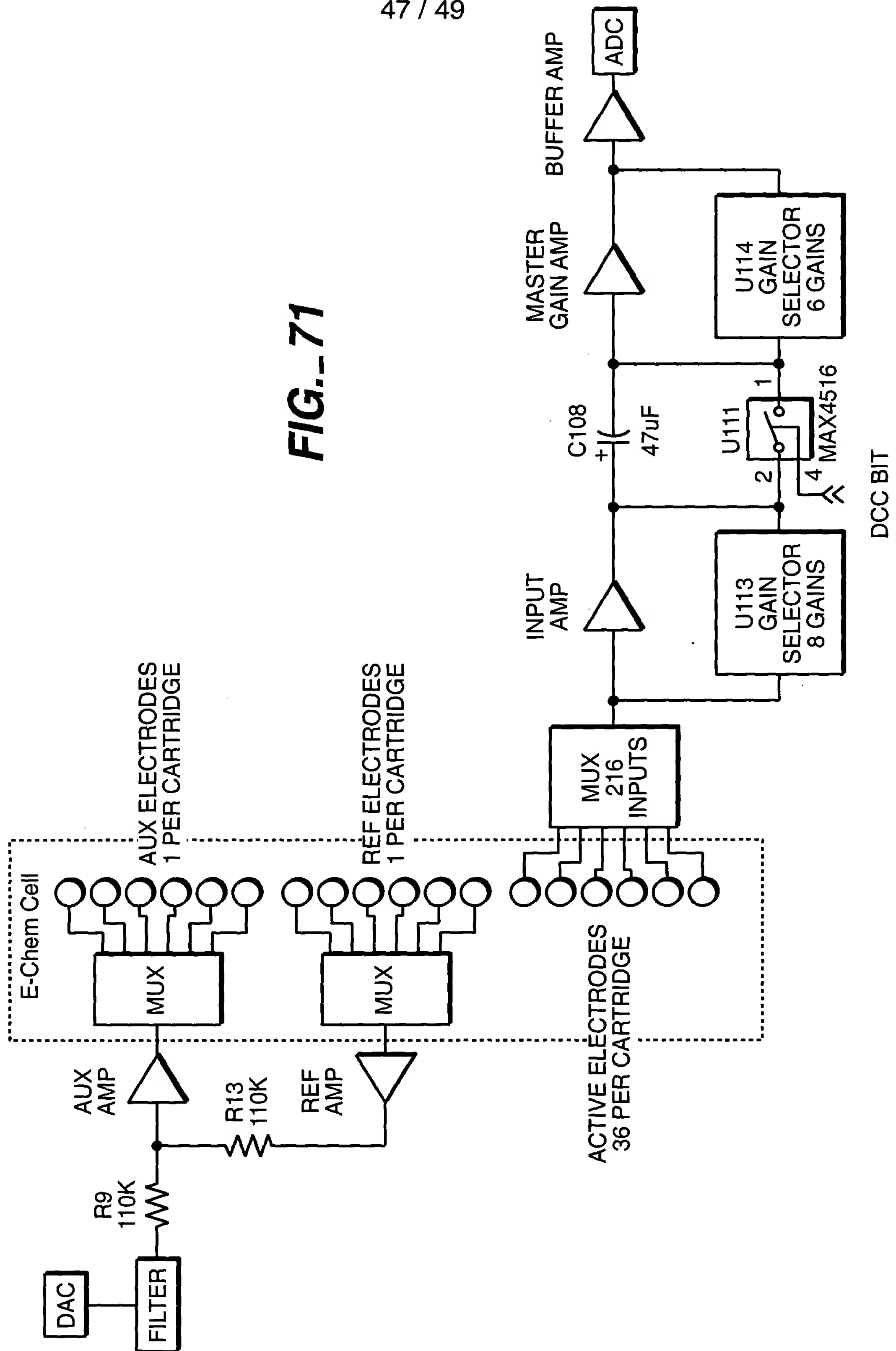
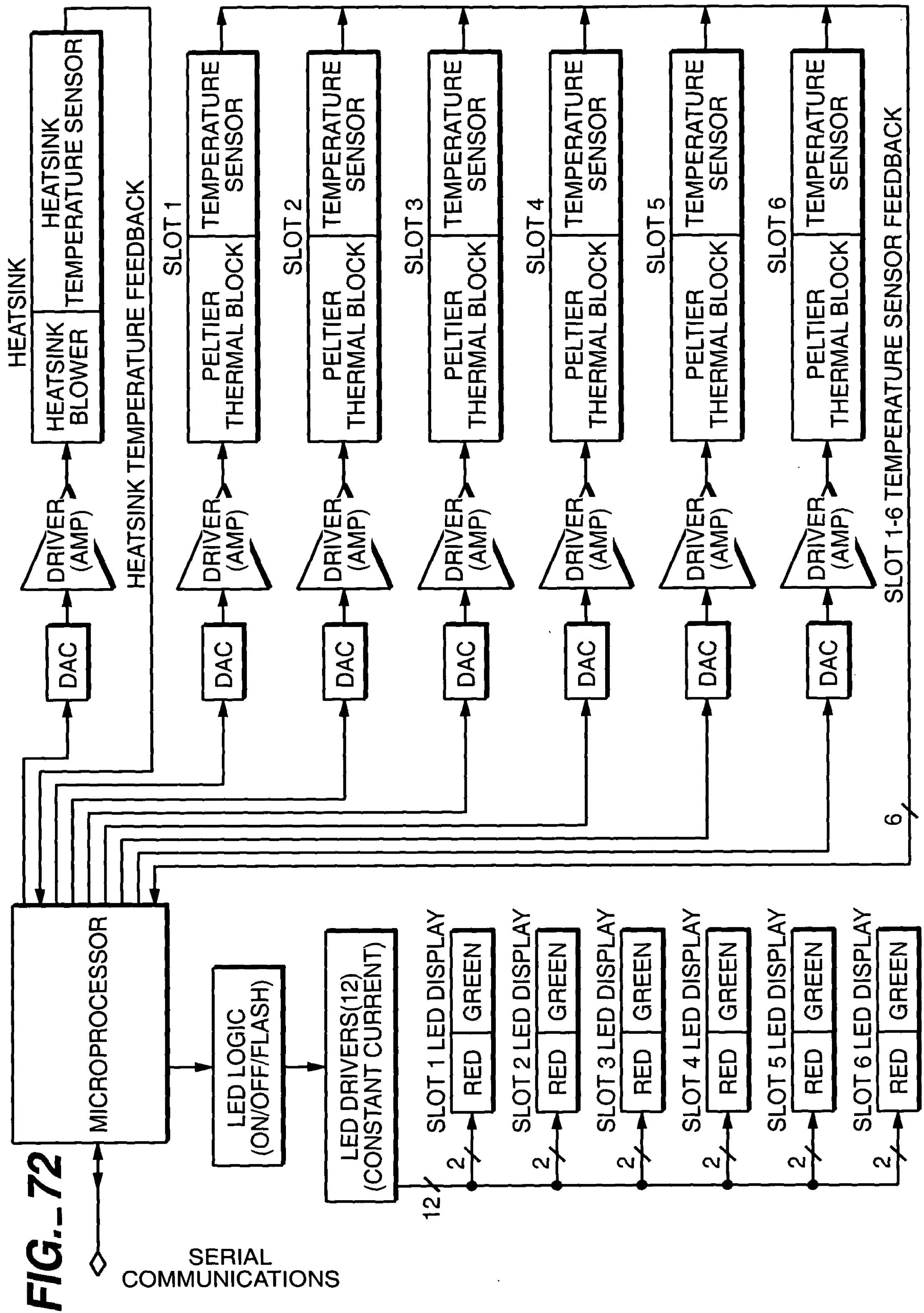
**FIG._70E****FIG._70F**

FIG.-71





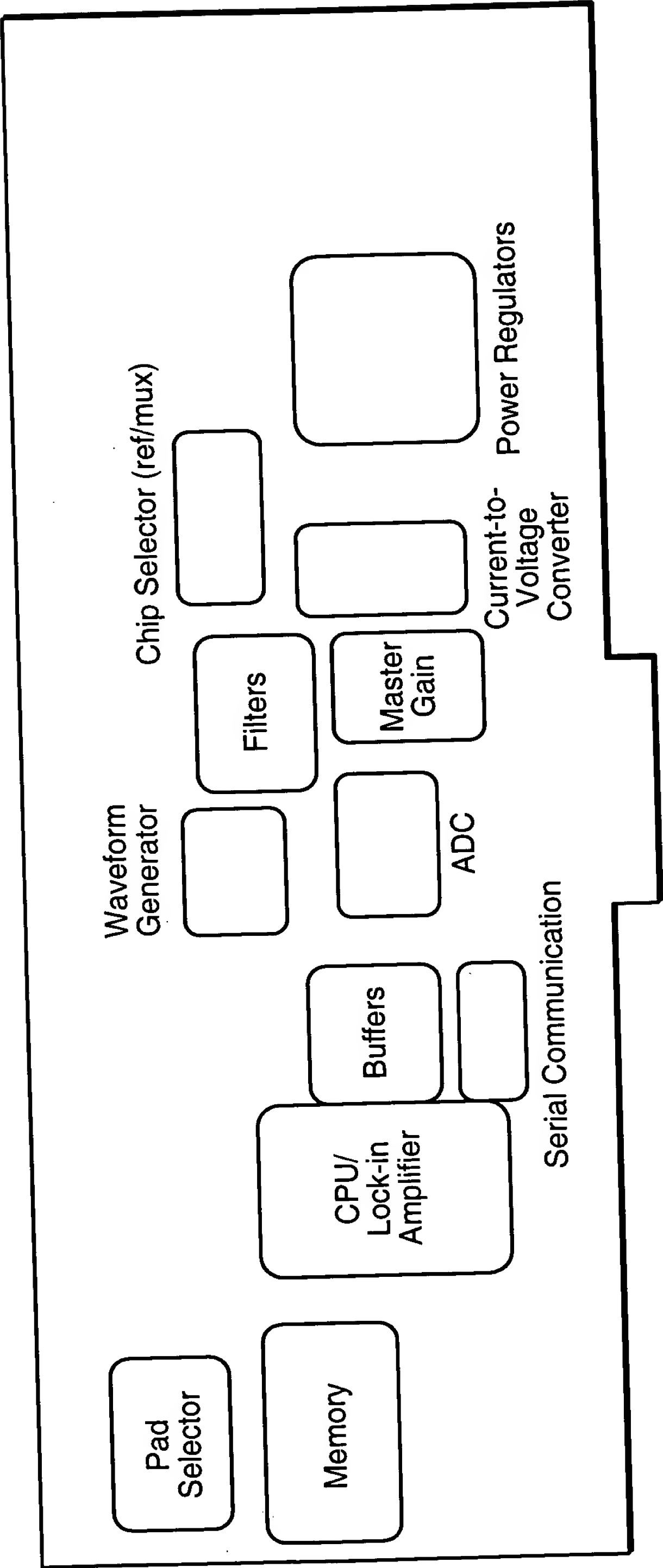


FIG. 73